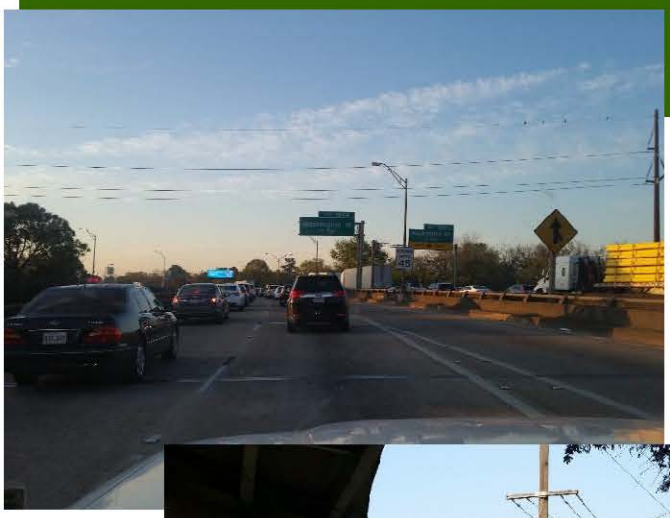
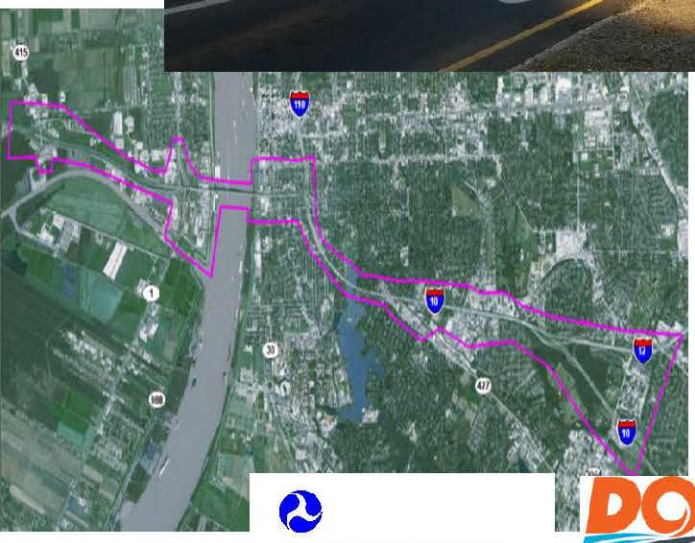
OCTOBER 2019

I-10 LA 415 to ESSEN LANE on I-10 AND I-12 STAGE 1 ENVIRONMENTAL ASSESSMENT AND SECTION 4(f) EVALUATION

STATE PROJECT NO. H.004100
FEDERAL AID PROJECT NO. H004100





EAST BATON ROUGE AND WEST BATON ROUGE PARISHES, LOUISIANA

APPROVED
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DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

SUMMARY OF PERMITS, MITIGATION, AND COMMITMENTS

SUMMARY OF PERMITS, MITIGATION, AND COMMITMENTS

The following permits, mitigation, and commitments will be implemented by the Louisiana Department of Transportation and Development (LA DOTD).

Permits, Mitigation, and Commitments

ITEM AND AUTHORITY	OVERSITE AGENCY/TIMING	MITIGATION/COMMITMENT
Section 404 Permit *Section 404 of the Clean Water Act as amended*	United States Army Corps of Engineers (USACE)/ Pre-construction	The LA DOTD will obtain a Nationwide Permit through the USACE for the crossing of Other Waters of the US.
Levee Districts (Pontchartrain/City of Baton Rouge and/or Atchafalaya Basin *Louisiana Revised Statutes Title 38 Chapter 4*	Pontchartrain Levee District and/or City of Baton Rouge and Atchafalaya Basin Levee District/ Pre-construction	The LA DOTD will request a Letter of No Objection from the levee districts with authority over the Mississippi River levees for the proposed shoulder widening on the Mississippi River Bridge approaches. The LA DOTD will permit any laydown or staging areas in proximity to levees if they are deemed necessary.
Louisiana Pollutant Discharge Elimination System (LPDES) Storm Water Discharge Permit *Section 402 of the CWA*	LDEQ/ Pre-construction	The LA DOTD will apply its LPDES General Permit for the discharge of storm water associated with construction of the project. A Storm Water Pollution Prevention Plan will also be prepared.
Bridge Permit *Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946*	LA DOTD/United States Coast Guard (USCG) / Pre-construction	LA DOTD will modify the existing Mississippi River Bridge permit as needed to accommodate modification to bridge approaches.
Cultural Resources *Section 106 of the National Historic Preservation Act (NHPA) of 1966*	LA DOTD/Federal Highway Administration (FHWA) / Pre/during/post construction	LA DOTD will comply with the stipulations of the Programmatic Agreement.
Noise barriers [as provided in 23 Code of Federal Regulations (CFR) part 772]	LA DOTD/FHWA/ Pre/during construction	Noise Barriers identified as qualifying for federal funding will be re-evaluated during design for reasonableness and feasibility. Noise barriers that are both reasonable and feasible will be constructed with federal funding.
Noise barriers	LA DOTD/ Pre/during/post construction	LA DOTD, with public support, has committed to seek special state appropriation (state funding) for noise barriers that do not meet federal funding requirements.
Section 4(f) mitigation – East Polk Street Park *Section 4(f) of the Department of Transportation Act of 1966*	LA DOTD/BREC/when agreements are in place pre-construction	LA DOTD has committed to mitigate for the acquisition of 0.04 acres of East Polk Street Park by assisting BREC with the installation of an internal trail and enhancements for the park as well as installation of plantings to restore the vegetation barrier to be removed by the project.

ITEM AND AUTHORITY	OVERSITE AGENCY/TIMING	MITIGATION/COMMITMENT
Relocations *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Relocation Act)*	LA DOTD/FHWA/ ROW acquisition	Relocations will comply with the Uniform Relocation Act.
Hazardous Waste	LA DOTD/LDEQ/ Pre-construction/ROW acquisition	During final design, further investigation/ assessments may be conducted to assess whether concerns exist that require remediation at the landfill site east of Nairn Road prior to construction or any sites noted as potential risks. Remediation of the site will be conducted if required.
Context Sensitive Solutions and Community Connections (CSS and CC) at Perkins Road	LA DOTD/City Parish of East Baton Rouge/ when agreements are in place pre-construction (ramp removal must occur first)	LA DOTD has committed to implementing CSS and CC in the vicinity of the Perkins Road ramps including but not limited to the extension of Greenwood Drive, a multiuse path from the Perkins Road Overpass to Perkins Road near the Acadian Village Shopping Center, new parking areas, restoration of existing parking areas under I-10 and under the off ramp to be removed, and additional green space.
CSS/CC – Expressway Park to Dalrymple	LA DOTD/ when agreements are in place pre-construction	LA DOTD has committed to implementing CSS and CC in the form of a multiuse path or greenway to run from 10th Street at Expressway Park to Dalrymple Drive within existing right of way including access to East Polk Street Park and a pedestrian crossing at March Street and Dalrymple Drive.
CSS/CC – Expressway Park to Highland Road	LA DOTD/ when agreements are in place pre-construction	LA DOTD is considering implementing CSS and CC in the form of a multiuse path connecting Expressway Park via existing sidewalks and streets to the South Boulevard levee trailhead.
Signature Bridge/CSS – City Park Lake	LA DOTD/FHWA/Final design	LA DOTD has committed to the construction of a “signature bridge” at this location. Two concepts were presented to the public – one was a variable depth box-girder superstructure and the other a Spandrel Arch.
Signature Bridge/CSS and CC – Nairn Street Bridge	LA DOTD/FHWA/Final design	LA DOTD has committed to the construction of a “signature bridge” at this location. The signature bridge will have pedestrian and bicycle accommodations as well as decorative screening and possible rest areas or bump outs.

ENVIRONMENTAL CHECKLIST

ENVIRONMENTAL CHECKLIST

WBS No. H.004100
Name: I-10:LA 415 to Essen on I-10 and I-12
Route: I-10
Parish: East and West Baton Rouge

1. General Information

☐Conceptual Layout ☒Line and Grade ☐Preliminary Plans
☐Survey ☐Plan-in-Hand ☐Advance Check Prints

2. Class of Action

☐ Environmental Impact Statement (E.I.S.)
☒ Environmental Assessment (E.A.)
☐ Categorical Exclusion (C.E.)
☐ State Funded Only (EE/EF/ER)

☐Programmatic C.E. (P.C.E.)
☐ 23 CFR 771.177(c)_____
☐ 23 CFR 771.177(d)_____

3. Project Description

I-10 will be widened by the addition of one travel lane in each direction on mainline I-10 in the study area from LA 415 to Essen excluding the MRB, with noted exceptions, modifications at LA 1 to include shoulder widening, acceleration/deceleration lane lengthening, and an additional travel lane westbound to LA 415, an auxiliary lane eastbound from LA 415 to LA 1, lengthening the acceleration/deceleration lanes on I-10 for the Highland Road/Nicholson Drive interchange to the MRB truss, consolidation of the Washington and Dalrymple interchanges into one interchange, closure of the Perkins ramps, ramp lengthening of the existing diamond interchange at Acadian along with improvements along Acadian, and two options near the terminal of the ramp at College Drive. Option 1 includes a slip exit ramp to Trust Drive and Option 2 does not include the slip ramp. Under the identified preferred alternative, the twin bridges over the City Park Lake and the Nairn overpass will be replaced with signature bridges.

4. Public Involvement

☒ Views were solicited. (March 6, 2017)
☐ Views were not solicited.
☒ Public Involvement events held. (List events and dates in Section 11.)
☒ A public hearing/opportunity for requesting a public hearing required. (List dates in Section 11.)
☐ A public hearing/opportunity for requesting a public hearing not required.

5. Real Estate

		NO	YES	N/A
a.	Will additional **right-of-way** be required?	☐	☒	☐
	Is right of way required from a **burial/cemetery** site?	☒	☐	☐
	Is right-of-way required from a Wetland Reserve Program (**WRP**) property?	☒	☐	☐
	Is required right-of-way prime **farmland**? (Use form AD 1006, if needed) ...	☒	☐	☐
b.	Will any **relocation** of residences or businesses occur?	☐	☒	☐
c.	Are construction or drainage **servitudes** required?	☐	☒	☐

6. Section 4(f) and Section 6(f)

		NO	YES	N/A
a.	Will historic sites or publicly owned parks, recreation areas, wildlife or waterfowl refuges (**Section 4f**) be affected?	☐	☒	☐
b.	Are properties acquired or improved with **L&WC** funds affected?	☒	☐	☐

7. Cultural Section 106

		NO	YES	N/A
a.	Are any **known historic properties** adjacent or impacted by the project? (If so, list below)……..	☐	☒	☐
b.	Are any k**nown archaeological sites** adjacent or impacted by the project? (If so, list site # below) ……..	☒	☐	☐
c.	Would the project affect property owned by or held in trust for a federally recognized **tribal government**?	☒	☐	☐

8. Natural & Physical Environment

		NO	YES	N/A
a.	Are **wetlands** affected? …….....	☒	☐	☐
b.	Are **Other Waters** of the U.S. affected? …….....	☐	☒	☐
c.	Are **Endangered/Threatened Species**/Habitat affected? ……..	☒	☐	☐
d.	Is project within 100 Year **Floodplain**?	☐	☒	☐
e.	Is project in **Coastal Zone** Management Area?	☒	☐	☐
f.	Is project in a **Coastal Barrier Resources** area? ……..	☒	☐	☐
g.	Is project on a **Sole Source Aquifer**? ……..……..	☐	☒	☐
h.	Is project impacting a **navigable waterway**?	☒	☐	☐
i.	Are any State or Federal **Scenic Rivers/Streams** impacted? …….	☒	☐	☐
j.	Is a **noise** analysis warranted (Type I project) ……..……	☐	☒	☐
k.	Is an **air** quality study warranted?	☐	☒	☐
l.	Is project in a **non-attainment** area? …….....	☒	☐	☐
m.	Is project in an approved Transportation Plan, Transportation Improvement Program (TIP) and State Transportation Improvement Program (**STIP**)?	☐	☒	☐
n.	Are **construction** air, noise, & water impacts major? ……..	☒	☐	☐
o.	Will the project affect or be affected by a **hazardous waste site**, leaking underground storage tank, oil/gas well, or other potentially contaminated site?	☐	☒	☐

9. Social Impacts

		NO	YES	N/A
a.	Will project change **land use** in the area? ……	☒	☐	☐
b.	Are any c**hurches and schools** impacted by or adjacent to the project? …... (If so, list below)	☐	☒	☐
c.	Has **Title VI** been considered? ……	☐	☒	☐
d.	Will any **specific groups** be adversely affected? (i.e., *minorities, low-income, elderly, disabled,* etc.) ……	☐	☒	☐
e.	Are any h**ospitals, medical facilities, fire police** facilities impacted by or adjacent to the project? (If so, list below)……	☒	☐	☐
f.	Will **Transportation patterns** change? ……..	☐	☒	☐
g.	Is **Community cohesion** affected by the project? ……	☒	☐	☐
h.	Are **short-term social/economic** impacts due to construction considered major?	☐	☒	☐
i.	Do conditions warrant **special construction times?** (i.e., *school in session, congestion, tourist season, harvest*) ……	☒	☐	☐
j.	Were **Context Sensitive Solutions** considered? (If so, explain below)……	☐	☒	☐
k.	Were **bike and pedestrian** accommodations considered? (explain below)…..	☐	☒	☐

l.	Will the **roadway/bridge be closed?** (If yes, answer questions below)…….	☐	☒	☐
	Will a **detour bridge** be provided?	☒	☐	☐
	Will a **detour road** be provided?	☐	☒	☐
	Will a **detour route** be signed?	☐	☒	☐

10. Permits (Check all permits that may be required)

☒Corps Nationwide	☐CUP/Consistency Determination	☐LA Scenic Stream
☒Corps Section 404/10	☒USCG Bridge	☒DEQ WQC
☒Levee	☐USCG Navigational Lights	☒LPDES Stormwater
☐Other (explain below)		

11. Other (Use this space to explain or expand answers to questions above.)

Item 4: Three public meetings for Stage 1 of the I-10: LA 415 to Essen project were held in August 2018. Two public hearings will be held for the I-10: LA 415 to Essen project once the draft EA has been approved.

Item 5.a and c: Right-of-way maps are in Appendix A.

Item 5.b: Relocations are discussed in Chapter 3, Section 3.20.

Item 6.a: Two parks/recreation areas are anticipated to have de minimis effects, Item 7.a references historic properties (See Chapter 3, Sections 3.11 and 3.12).

Item 7.a: 17 properties that are considered contributing elements to two new proposed historic districts and one multiple property submission are in or affected by the proposed right-of-way for the project. These include four businesses and 13 residences.

Item 8.b: Other Waters may be affected by the proposed project; no jurisdictional wetlands will be impacted, as they are in areas where construction will not occur.

Item 8.d: Portions of the project area fall within the 100-year floodplain.

Item 8.g: The Southern Hills SSA is below the project area.

Item 8.h: The Mississippi River is a navigable water; however, no construction activities will occur over the navigation channel, only shoulder improvements on the approaches are planned.

Item 8.j: The Noise Analysis is in Appendix E.

Item 8.k: The Air Quality Analysis is in Appendix F.

Item 8.m: This project is not included in the Capital Region Planning Commission's (CRPC) current conforming Metropolitan Transportation Plan (MTP), *"MOVE 2042"*. However, the CRPC is currently performing the necessary air quality conformity analysis in order to amend their MTP to include this project. Once a conformity determination has been received, the amended MTP will be brought before the CRPC's Transportation Policy Committee for adoption (expected December 2019). The CRPC's Transportation Improvement Program (TIP) can then be amended to include the project.

Item 8.o: There are multiple sites representing recognized environmental conditions adjacent to or in the proposed right-of-way. These sites will require further investigation to assess the presence/absence of contamination. Included are: a former municipal landfill partially within I-10 right-of-way, two UST sites, one historical auto and one historical dry-cleaning site, former locations for Pearce Foundry and Machine Works and People's Ice and Fuel, and drums and debris located under the Perkins Road westbound on ramp.

Item 9.b: Four schools are in proximity to I-10 in the project area: Baton Rouge Christian Bible College, St. Francis Xavier Catholic School, McKinley Middle Magnet, and Baton Rouge Foreign Language

Academic Immersion Magnet (FLAIM). Churches in proximity to I-10 in the project area include: New St. Luke Baptist, Liberty Chapel Baptist, St. Francis Xavier Catholic, Progressive Baptist, New Prospect Missionary Baptist, Pine Prairie Church of Christ, Fairview Baptist, Neely United Methodist, and Ebenezer Baptist.

Item 9.c: Environmental Justices is discussed in Chapter 3, Section 3.21.

Item 9.d: A minority population exists in the project area, specifically the Old South Baton Rouge community.

Item 9.f: The project will affect traffic patterns, as it will increase capacity. The Nairn Drive overpass bridge will be replaced with a signature structure supporting a pedestrian path on the west side and multiuse path on the east side. This bridge will be closed during replacement and detour routes provided.

Item 9.h: Impacts to Perkins Road Overpass area businesses may be major due to parking closures during construction. During periods of overhead work, existing parking areas under the interstate will be periodically closed.

Item 9.j: Context Sensitive Solutions and Community Connections concepts were developed to restore connections severed by the construction of I-10 and provide increased access to parks and areas of interest.

Item 9.k: Bike and pedestrian accommodations were considered and new multipaths along with complete streets designs incorporated into the project.

Preparer: Kerry Oriol
Title: Project Manager
Date: September 26, 2019

Attachments

- ☒ S.O.V. and Responses (see *Appendix C*)
- ☒ Wetlands Finding (see *Appendix D*)
- ☒ Project Description Sheet (see *Chapter 1*)
- ☐ Conceptual Stage Relocation Plan (provided under separate cover)
- ☒ Noise Analysis (see *Appendix E*)
- ☒ Air Quality Analysis (see *Appendix F*)
- ☒ Exhibits and/or Maps (see figures located throughout the EA)
- ☒ Draft 4(f) Evaluation (see *Appendix H*)
- ☒ Form AD 1006 (Farmlands, *Appendix C*)
- ☒ 106 Documentation (see SHPO correspondence in *Appendix C and Appendix H*)
- ☒ Other: Line and Grade Plan/Profile Sheets and Detailed Cost (see *Appendix A*)
  Interchange Modification Reports (see *Appendix B*)
  Phase I Environmental Site Assessment (see *Appendix G)*
  Public Outreach Summary (see *Appendix I*)

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Appendix

CHAPTER 1.0

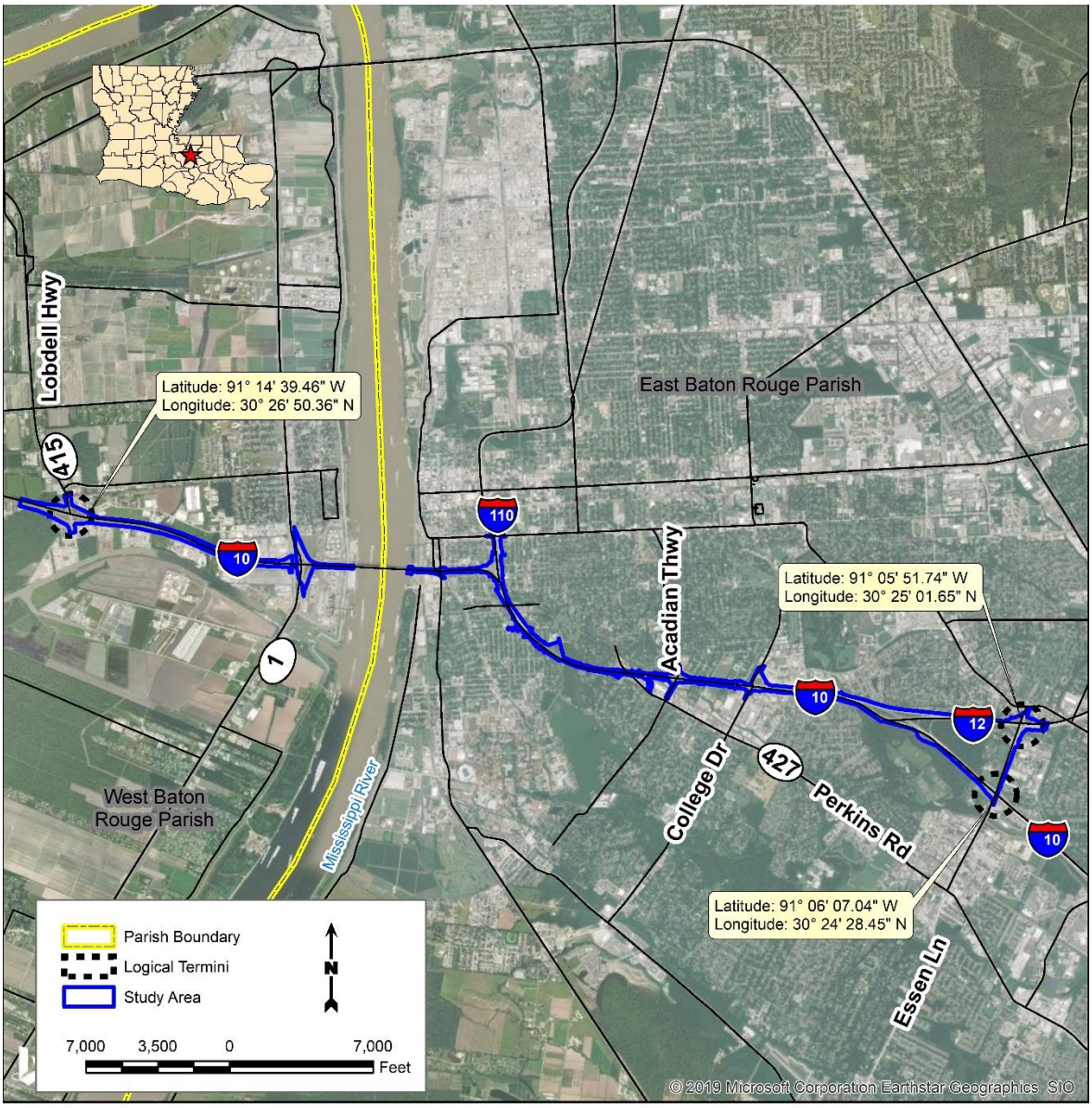
PURPOSE AND NEED

1.0 PURPOSE AND NEED

1.1 Description of the Proposed Project

The Louisiana Department of Transportation and Development (LA DOTD) prepared this Environmental Assessment (EA) for capacity improvements to Interstate 10 (I-10) from Louisiana Highway 415 (LA 415) in West Baton Rouge Parish to Essen Lane on I-10 and Interstate 12 (I-12) in East Baton Rouge Parish. **Figure 1** is the Project Study Area. The length of the project is approximately 10 miles.

FIGURE 1
PROJECT STUDY AREA



Base map comprised Bing Maps aerial imagery from (c) 2013 Microsoft Corporation and its data suppliers.

I-10 through the proposed project area is a major control of access (COA) urban freeway. I-10 supports substantial regional traffic as a primary east-west interstate in the southeast United States (US). Relative to location in the project area, I-10 mostly supports four (west bank) to six (east bank) travel lanes (2 or 3 in each direction) and may not have adequate shoulders, weave distances, or acceleration/deceleration lanes (Parsons Brinckerhoff, 1996).

I-10 will be widened by the addition of one travel lane to both eastbound (EB) and westbound (WB) I-10 from LA 415 to the I-10/I-12 split. There are a few locations along the route where either:

1. no widening will occur,
2. auxiliary lanes will be added, or
3. the widening will only involve shoulder improvements.

There will not be an additional lane in either direction on the Mississippi River Bridge (MRB). Widening between the trusses (see photo) would be extremely expensive. Only shoulder improvements are anticipated on the elevated portion of I-10 WB between I-110 and the MRB due to geometric constraints.

In addition to the new travel lanes, on the west bank, modifications at LA 1 to include shoulder widening, acceleration/deceleration lane lengthening, and an additional travel lane westbound to LA 415 and an auxiliary lane eastbound from LA 415 to LA 1 are proposed. On the east bank, in addition to the new travel lanes, lengthening the acceleration/deceleration lanes on I-10 for the Highland Road/Nicholson Drive interchange to the MRB is proposed and modifications to the I-10 interchanges at Washington Street, Dalrymple Drive, Perkins Road (Perkins), Acadian Thruway (Acadian), and College Drive (College) are proposed as well as the replacement of the Nairn Drive (Nairn) overpass bridge. Proposed modifications at each location include:

- Washington Street/Dalrymple Drive (Washington/Dalrymple) – One consolidated interchange is proposed for Washington/Dalrymple. This configuration would restrict the EB exit for Washington/Dalrymple to I-10 traffic only. I-110 traffic would use the new Terrace Street exit. The reconfigured interchange would also introduce an EB entrance from Dalrymple.
- Perkins – The existing interchange is a partial interchange in close proximity to the Acadian interchange. The ramp lengthening required at Acadian, to accommodate the additional travel lanes and to meet design criteria, necessitates the removal of the Perkins ramps.

- Acadian – Acceleration and deceleration lanes would be lengthened to provide an improved merging distance. Improvements along Acadian Thruway will also be provided.
- College – a new College flyover ramp is proposed from WB I-10 and an option to provide a dedicated right exit is also proposed off the College Drive westbound off ramp to allow traffic to flow directly to Corporate Boulevard via Trust Drive. The flyover ramp is a Segment of Independent Utility (SIU) and has been removed from the EA to be advanced to design and construction.
- Nairn Bridge – Replacement of this bridge with a signature structure supporting both pedestrians and cyclists is proposed.

Details associated with the interchange modifications are provided in Chapter 2 and **Appendices A (Line and Grade)** and **B (Interchange Modification Reports)**.

1.2 Purpose and Need

The purpose of the project is to improve overall system operation of Interstate 10 (I-10) through the Baton Rouge area. The I-10 corridor is a major transportation and freight corridor designed and constructed through Baton Rouge during the 1960s to accommodate a peak capacity of 80,000 vehicles per day (VPD). The need of the project is to relieve congestion, improve operations, and extend the useful life of the facility.

Current congested traffic conditions on I-10 are the result of inadequate, aging infrastructure and increased travel demand. The average daily traffic is approximately 130,000 to 160,000 VPD (almost double the design capacity) of which 8 to 15 percent is freight. The average daily traffic is expected to grow by 1 percent annually for the next 20 years. Additional travel lanes in each direction are proposed to improve congestion and travel time within the area (see **Exhibits 1** and **2** for further explanation of capacity).

I-10 was constructed and designed for vehicles that were smaller and lighter than today's vehicles. Typically, roads are designed for a life of 20 years and bridges are designed for a life of 50 years. Approximately 43 percent of the 8.4 miles between LA 415 and the I-10/I-12 split are bridges. An extensive study of the bridge structures and a life cycle cost analyses was conducted in 2017-2018. This study concluded that most of the bridge structures require rehabilitation or replacement.

The lack of shoulders on bridges, short merge distances, and existing interchanges are functionally problematic. Shoulders, longer acceleration and deceleration lanes, and ramp closures are proposed to improve functionality.

Exhibits 1 and **2** represent theoretical capacity, the capacity prior to system breakdown. Currently the facility exceeds theoretical capacity and will continue to exceed theoretical capacity for the next 20 years. The below exhibits compare the present day configuration of three travel lanes in each direction with the proposed configuration of four travel lanes. This comparison demonstrates what the addition of a lane in each direction will provide. Each travel lane can carry up to 1,950 vehicles per hour (VPH), which equates to 5,850 VPH in each direction for the existing I-10 corridor. The addition of the fourth travel lane will increase the capacity up to 7,800 vehicles per hour in each direction.

EXHIBIT 1
EXISTING CAPACITY ON I-10

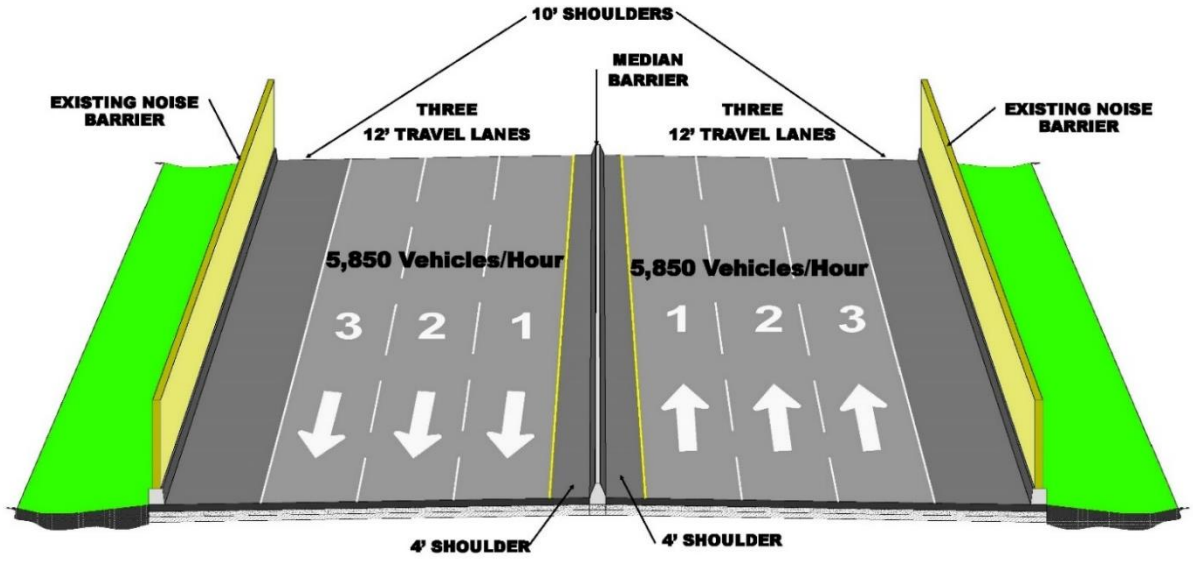
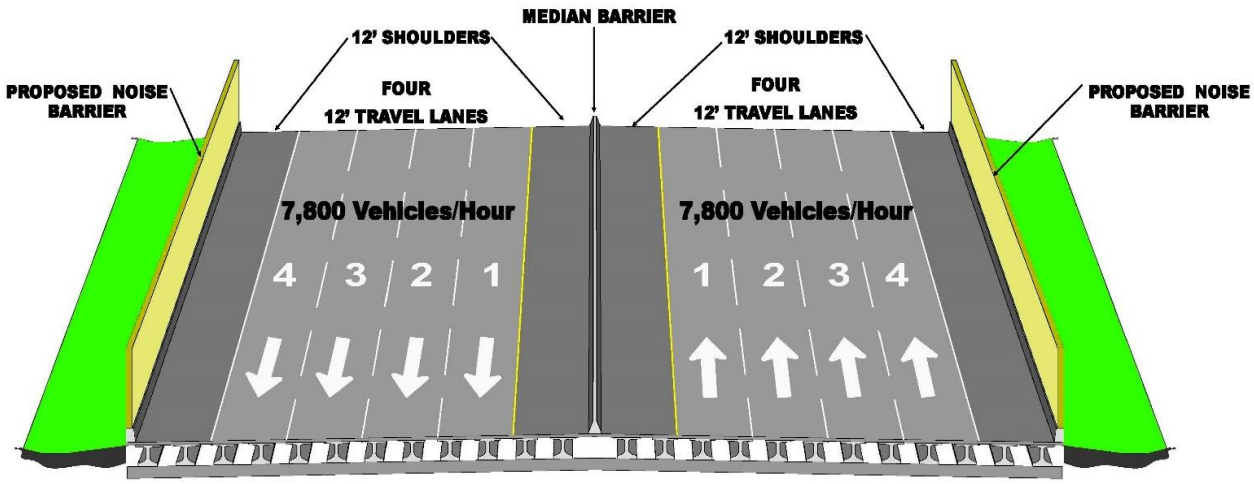


EXHIBIT 2
PROPOSED CAPACITY ON I-10



The expectation of the facility with the proposed improvements is a reduction of the duration of the peak travel times and improved functionality of the I-10 system within the study area.

CHAPTER 2.0

ALTERNATIVES

2.0 ALTERNATIVES

2.1 Alternatives Development Process – Feasibility Study

2.1.1 Feasibility Study Alternatives

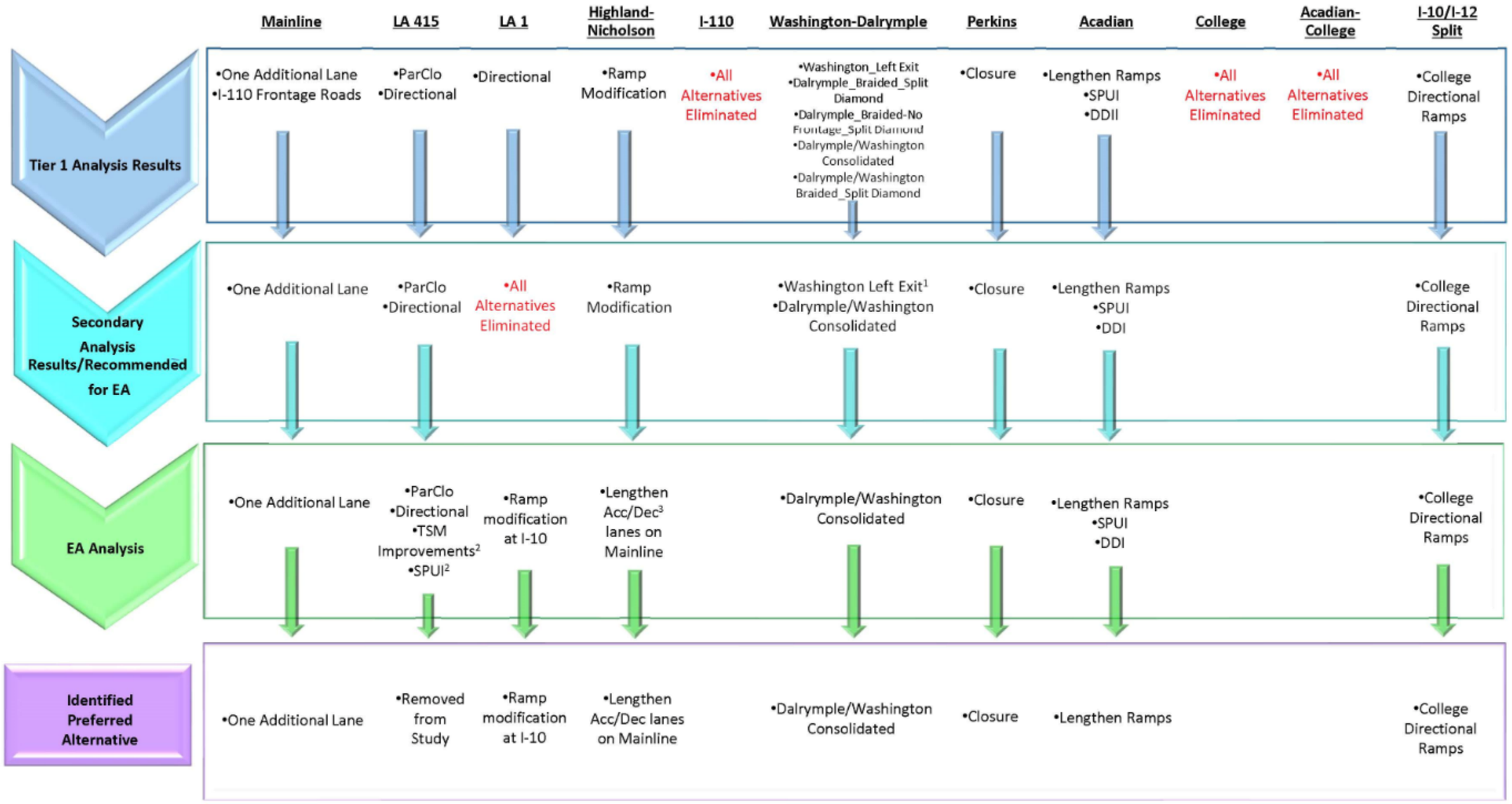
Approximately 71 alternatives were initially considered for the mainline of I-10 and associated interchanges *(I-10 Corridor Improvement Stage 0 Feasibility Study, 2016)*. Traffic analysis and engineering data were used to help identify structural and operational deficiencies, and then alternatives developed to resolve the identified issues. A Tier 1 analysis was developed to evaluate the volume of alternatives against multiple categories including traffic operations, safety, required right-of-way (ROW), environmental/social impacts, cost, and the ability to phase construction. At the conclusion of the Feasibility Study, 11 alternatives were recommended for evaluation in the Stage 1 Planning and Environmental document (this EA). The chart below shows the progression of the alternatives (**Exhibit 3**).

2.1.2 Feasibility Study Alternatives Carried into EA

One of the 11 alternatives carried forward from the Feasibility Study was for mainline I-10 widening, and the remaining ten involved multiple interchange configurations. Of the ten interchange alternatives, the recommended Washington I-110 Left Exit was studied as a separate improvement project requiring an individual environmental evaluation. This project is the Terrace Street project (SPN H.012422), presently under construction.

Section 2.3 provides details associated with the ten build alternatives that moved into this EA for further study. As shown in **Exhibit 3**, additional alternatives were considered during the EA analysis for LA 415, LA 1 and Highland/Nicholson. There remains the alternative to not build.

EXHIBIT 3
TIER 1 TO IDENTIFIED PREFERRED ALTERNATIVE FLOW CHART



[1]Washington left exit is Terrace Street Ramp project
[2]TSM and SPUI Alternatives were pulled from the LA 415 Corridor Study
[3]Acceleration/Deceleration

2.2 Design Guidelines

The design guidance, criteria and standards for the project generally conform to the following:

- LA DOTD *"Roadway Design Procedures and Details"* (July 2009)
- LA DOTD *"Bridge Design and Evaluation Manual (BDEM)"* (July 2018)
- LA DOTD "Minimum Design Guidelines" (March 2017)
- American Association of State Highway and Transportation Officials' (AASHTO) publication *"A Policy on Geometric Design of Highways and Streets",* 7th Edition dated 2018 (Green Book)
- AASHTO publication *"LRFD Bridge Design Specifications"* (7th Edition, 2014 with 2015 and 2016 Interim Revisions)
- LA DOTD Engineering Directives and Standards (EDSMs).

Corridor specific "Minimum Design Guidelines" and criteria generated were used as a basis to develop line and grade alternatives for I-10 and the associated interchange and surface street improvements through the project corridor.

A substantial portion of the project involves complex and congested transportation facilities near intensely urbanized areas. The design guidelines and criteria described above set the framework for which all the proposed alternative improvements were developed. However, because of the complexity of the facility and the proximity to established residential and commercial areas there are areas or components of the proposed improvements that could not be reasonably designed to meet some of the appropriate design values described in the Design Reports for that type of facility. Therefore, several potential design waivers and design exceptions have been identified based on the proposed line and grade design.

There are various reasons that these design waivers and exceptions are necessary. These include:

- Substantial adverse impact to the surrounding neighborhoods
- Substantial increase in project cost for some component of the project
- Difficulty maintaining traffic flow during the construction or reconstruction of that component of the project

Details relative to potential design waivers and exceptions are fully disclosed in the Line and Grade document in **Appendix A**.

2.3 Alternatives Screening – EA

2.3.1 Mainline

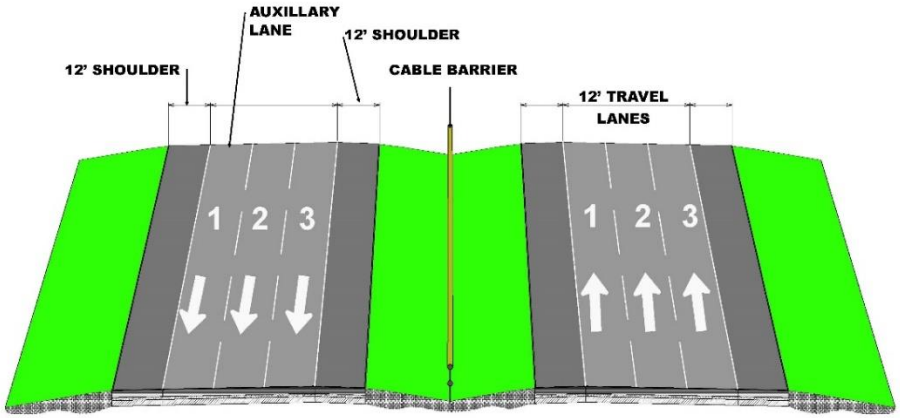
The Mainline alternative is to add one travel lane to both eastbound and westbound I-10 in the project area. The concept of widening by more than one lane was eliminated. Adding more than one travel lane in each direction would require modification or complete reconstruction of the following interchanges: LA 415, LA 1, Highland Road, I-10/I-110 split, Washington, Dalrymple, Perkins, Acadian, College, as well as replacement of the Nairn bridge. The alternative was not considered prudent based on the cost to construct, amount of additional ROW that would be required, impacts to existing historic districts and parks, and time required to assess the condition of the existing Mississippi River bridge and constructability of the additional lanes on the bridge.

Widening I-10 by one travel lane in each direction results in a need to modify interchanges, rebuild an overpass, and potentially relocate sound barriers. Interchanges to be modified are discussed in Section 2.3.2, other improvements accompanying the additional travel lanes include:

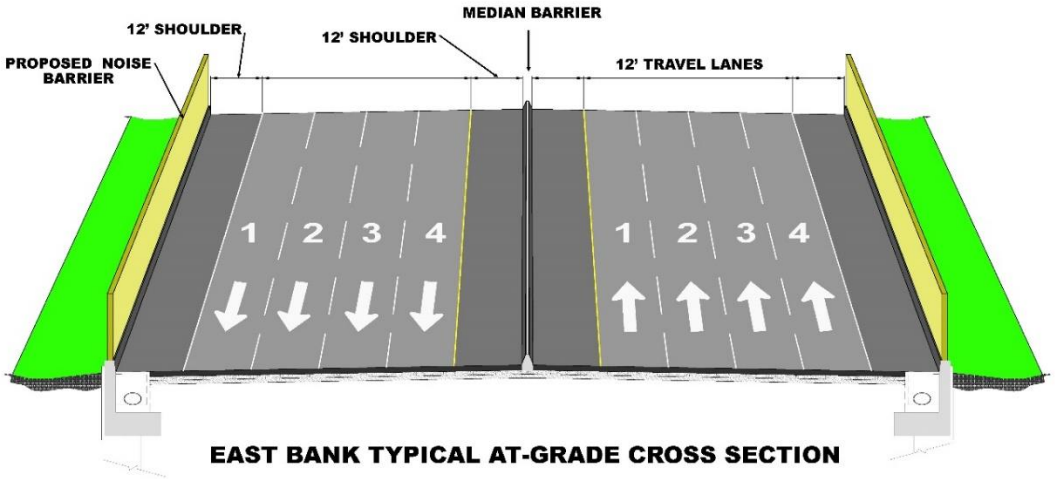
- Lengthening the acceleration/deceleration lanes on I-10 for the Highland Road/Nicholson Drive interchange to the MRB truss
- Replacement of the overpass at Nairn, due to the proximity of the travel lanes to the bridge piers of the Nairn overpass
- Shoulder improvements are proposed on I-10 westbound from I-110 to the MRB
- Addition of an auxiliary lane eastbound from LA 415 to LA 1

The additional travel lanes will be 12 feet wide. Typically, the mainline inside and outside shoulder widths will be 12 feet. In some elevated areas the shoulders will be narrowed to 10 feet wide to address constructability constraints which will require a design waiver. On the MRB approaches, the existing inside shoulder width of two-feet will be maintained since realigning the travel lanes to provide 12-foot inside shoulders is not feasible. This will require a design exception. The two-foot width for both the inside and outside shoulders through the main MRB truss will be maintained since no widening work is projected through this segment. Noise barriers, where warranted, will be located along the ROW line with a minimum of a 1.5-foot of ROW behind the barriers. In some locations, a construction servitude of no more than 10-feet behind the barriers will be necessary. Typical sections for the west bank and east bank are shown below (**Exhibit 4**).

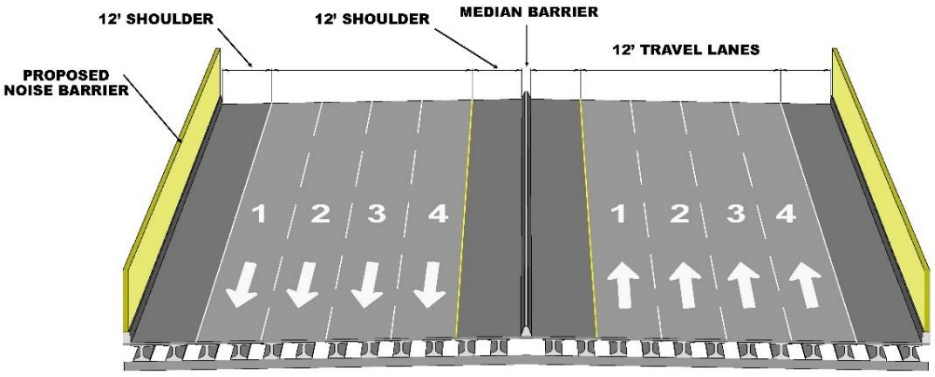
EXHIBIT 4
I-10 MAINLINE TYPICAL SECTIONS



WEST BANK TYPICAL AT-GRADE CROSS SECTION



EAST BANK TYPICAL AT-GRADE CROSS SECTION



EAST BANK TYPICAL ELEVATED CROSS SECTION

2.3.2 Interchanges

2.3.2.1 LA 415

Four alternatives were considered for the LA 415/I-10 Interchange in the EA: a partial cloverleaf and directional flyover ramp from the Stage 0 study, and a Single Point Urban Interchange (SPUI) and Transportation Systems Management (TSM) improvements from the LA 415 Corridor study. Two of these carried over from the Feasibility Study and two were pulled from another study.

Early in the EA study process, data collection efforts revealed that ROW impacts associated with both the directional ramp and cloverleaf alternatives could be avoided by considering two of the alternatives studied in the LA 415 Corridor Study: a SPUI and TSM improvements.

TSM improvements are designed to improve traffic flow without substantial changes to existing physical highway configurations. TSM improvements for LA 415 included additional traffic signals, turn lanes, and access control measures.

Construction of a SPUI, while less impactful than the previously considered alternatives, would require replacement of the I-10 bridge over LA 415. Due to the need to replace the I-10 bridge, the TSM alternative proved to be the least damaging, practicable alternative.

The EA process requires that alternatives be analyzed with consideration to other planned projects. Another LA DOTD project, State Project Number (SPN) H.005121, the LA 1/LA 415 Connector, is also in the Planning and Environmental stage. The outcome of this project, which involves a new bridge over the Intracoastal Waterway, is likely to impact the I-10 bridge at LA 415. Due to the need to analyze and potentially redesign the LA 415 interchange as a result of SPN H.005121, all modifications to the LA 415 interchange were eliminated from consideration under this project.

2.3.2.2 LA 1

The LA 1 interchange was carried into the planning study with no construction alternatives, as the directional interchange concept did not receive approval during the

Tier 1 analysis. During the traffic and engineering study for the mainline widening, it was determined that modifications to LA 1 at I-10 could be beneficial. Ramp modifications include proposed shoulder widening improvements, acceleration/deceleration lane extensions at the LA 1 ramps at I-10, and the continuation of a third westbound lane past the LA 1 WB exit ramp to LA 415.

2.3.2.3 Washington/Dalrymple

With the removal of the Washington Left Exit alternative, only one alternative for these interchanges was recommended for study, a Washington/Dalrymple consolidated interchange.

This alternative combines and relocates the current movements at the I-10/Washington and the I-10/Dalrymple partial interchanges.

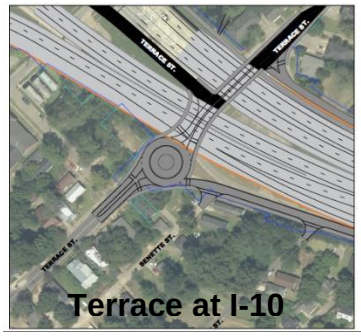
For the I-10 eastbound direction, the exits to Washington and Dalrymple are combined into a single exit positioned west of the I-10/I-110 merge. This ramp accesses the Eastbound Collector-Distributor (EBCD) Road which combines with Braddock Street and leads to Washington and then on to Dalrymple. An I-10 eastbound entrance ramp is provided off the EBCD Road just to the east of Washington. This entrance is accessed from Dalrymple by entering onto the Westbound Collector-Distributor (WBCD) Road then proceeding to a dedicated U-turn to the EBCD Road just east of Washington.

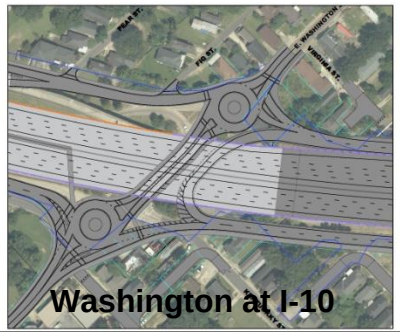
For the I-10 westbound direction, the exits to Dalrymple and Louise Street are combined into a single exit that accesses Dalrymple near its current loop ramp exit. This exit also continues to the WBCD Road on to the dedicated U-turn for the I-10 eastbound entrance and then to Washington and Louise. The WBCD Road has a braided over/under arrangement with the I-10 westbound entrance ramp from Dalrymple.

A roundabout is proposed at the intersection of Terrace Street and Braddock Street to facilitate the movement from the new I-110 southbound/Terrace Street exit ramp to the EBCD Road.

Roundabouts are proposed at the intersections at Washington and both the EBCD Road/Braddock Street and the WBCD Road/McCalop Street. In addition, a

roundabout is proposed at the Dalrymple/I-10 Ramp Terminals/East Lakeshore Drive signalized intersection (three examples are below). Signalized interchanges were considered at Washington and Dalrymple; however, they were determined to be less efficient and require more ROW than roundabouts.





2.3.2.4 Perkins/Acadian

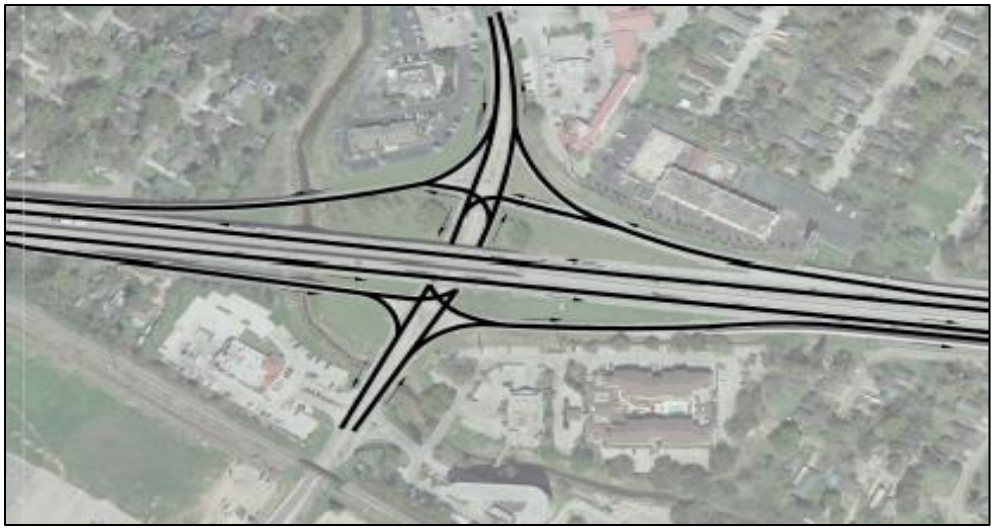
Closure of the Perkins ramps was the only alternative considered for the Perkins interchange. The existing Perkins interchange is a partial interchange near the Acadian interchange. The ramp lengthening required at Acadian to accommodate the additional travel lanes and to meet design criteria necessitates the removal of the Perkins ramps.

Three interchange configurations were considered for Acadian: ramp lengthening with the existing diamond interchange, a SPUI, and a Diverging Diamond Interchange (DDI).

Ramp Lengthening

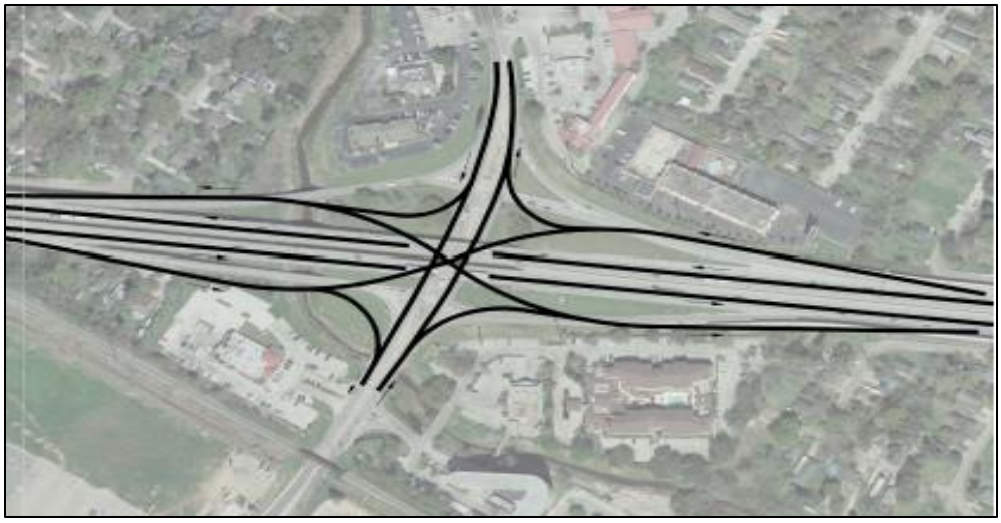
This alternative involves lengthening the acceleration and deceleration lanes of all the Acadian ramps (see concept example below next paragraph).

There are substantial improvements along Acadian proposed in this alternative. These improvements include double left turn lanes both northbound and southbound on Acadian to the I-10 entrance ramps. All ramps will be widened near the terminals to accommodate double left turns and dedicated right turn lanes from the exit ramps. Acadian will be widened to three through lanes northbound from the Perkins/Stanford intersection to the I-10 eastbound entrance ramp.



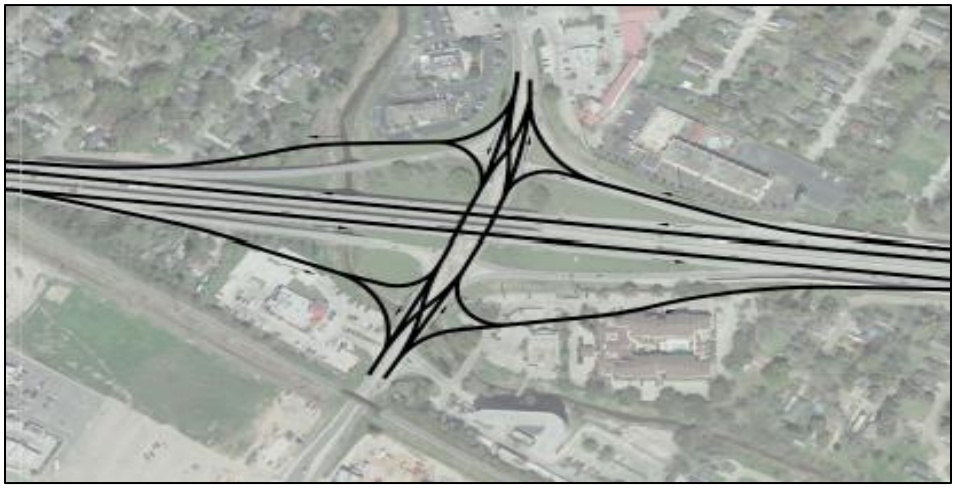
SPUI

A SPUI configuration offers the operational advantage of allowing vehicles making opposing left turns to pass to the left of each other instead of to the right (concept example below). Because left paths do not intersect, this design eliminates conflict and increases the overall efficiency of the interchange. It should be noted that this alternative also requires longer ramps and, therefore, requires the closure of the Perkins ramps.



DDI

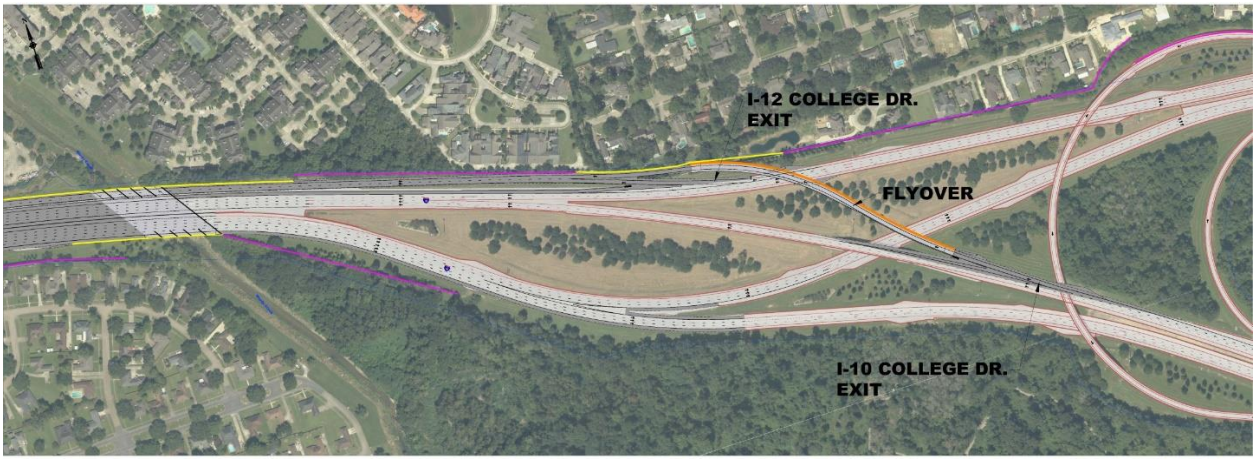
A DDI more efficiently facilitates heavy left-turn movements than a traditional diamond (concept example below). Traffic on the cross route moves to the left side of the roadway for the segment between signalized ramp intersections. This configuration may potentially require moving the existing southern ramp terminals. It should be noted that this alternative also requires longer ramps and, therefore, requires the closure of the Perkins ramps.



2.3.2.5 College

The only alternative for the College interchange to move forward from the Feasibility Study is dedicated westbound exit lanes from both I-10 and I-12. These lanes would diverge from I-10 westbound and from I-12 westbound prior to the I-10/I-12 merge. The I-10 dedicated exit would be a flyover ramp from westbound I-10 just west of the I-12 eastbound exit. This change eliminates the current weaving issue at the I-10/I-12 westbound merge and removes conflicts by removing the triple lane change.

The two dedicated exit lanes merge to become a two-lane ramp which proceeds west to the existing College Drive exit ramp terminal. The flyover ramp is an SIU and has been removed from this EA to be advanced to design and construction under State Project Number H.013897 (general concept below).



Based on public input, an exit slip ramp option is proposed to connect to Trust Drive. This will allow vehicles to access Corporate Boulevard without travelling to College Drive. This is shown as Option 1 for the College Ramp terminal area in the Line and Grade Study in **Appendix A**. The original arrangement shown to the public without the Trust Drive slip ramp option is shown as Option 2 (**Appendix A**) for this area.

2.4 Preferred Alternative Identification

The LA 415 interchange and Perkins/Acadian interchange areas had multiple build alternatives for further study in the EA (see **Exhibit 1**, third row). With the removal of the LA 415 interchange from SPN H.004100, the Perkins/Acadian interchange became the only area with multiple build alternatives to consider. The addition of one travel lane in each direction for the I-10 mainline, along with the mainline improvements required because of the additional lanes, is the only build alternative for the I-10 mainline in the project area. Likewise, there is only one build alternative for LA 1, Washington/Dalrymple, and the College interchange areas. The No-Build Alternative is an alternative for the entire project.

The Perkins/Acadian alternatives studied, as noted above, included a DDI, SPUI, and lengthening the existing diamond interchange with at-grade improvements along Acadian. Removal of the Perkins ramps would be required regardless of which interchange alternative was selected at Acadian. Both the DDI and SPUI were observed to result in greater impacts to the community than the ramp lengthening alternative due to the acquisition of ROW.

2.4.1 Preferred Alternative

The preferred alternative identified for the I-10: LA 415 to Essen Lane project is to add one travel lane in each direction on mainline I-10 in the study area from LA 415 to Essen excluding the MRB, with noted exceptions, modifications at LA 1 to include shoulder widening, acceleration/deceleration lane lengthening, and an additional travel lane westbound to LA 415, an auxiliary lane eastbound from LA 415 to LA 1, lengthening the acceleration/deceleration lanes on I-10 for the Highland Road/Nicholson Drive interchange to the MRB truss, consolidation of the Washington and Dalrymple interchanges into one interchange, closure of the Perkins ramps, ramp lengthening of the existing diamond interchange at Acadian along with improvements along Acadian, and two options near the terminal of the ramp at College Drive. Option 1 includes a slip exit ramp to Trust Drive and Option 2 does not include the slip ramp. Under the identified preferred alternative, the twin bridges over the City Park Lake and the Nairn overpass will be replaced with signature bridges.

Roundabouts are the intersection design at the Terrace off ramp, Dalrymple, and the Washington/Dalrymple ramp terminals. COA for roundabouts and other intersections affected by the consolidation of Washington/Dalrymple are shown on the Line and Grade layouts in **Appendix A**.

2.4.2 Sections of Construction

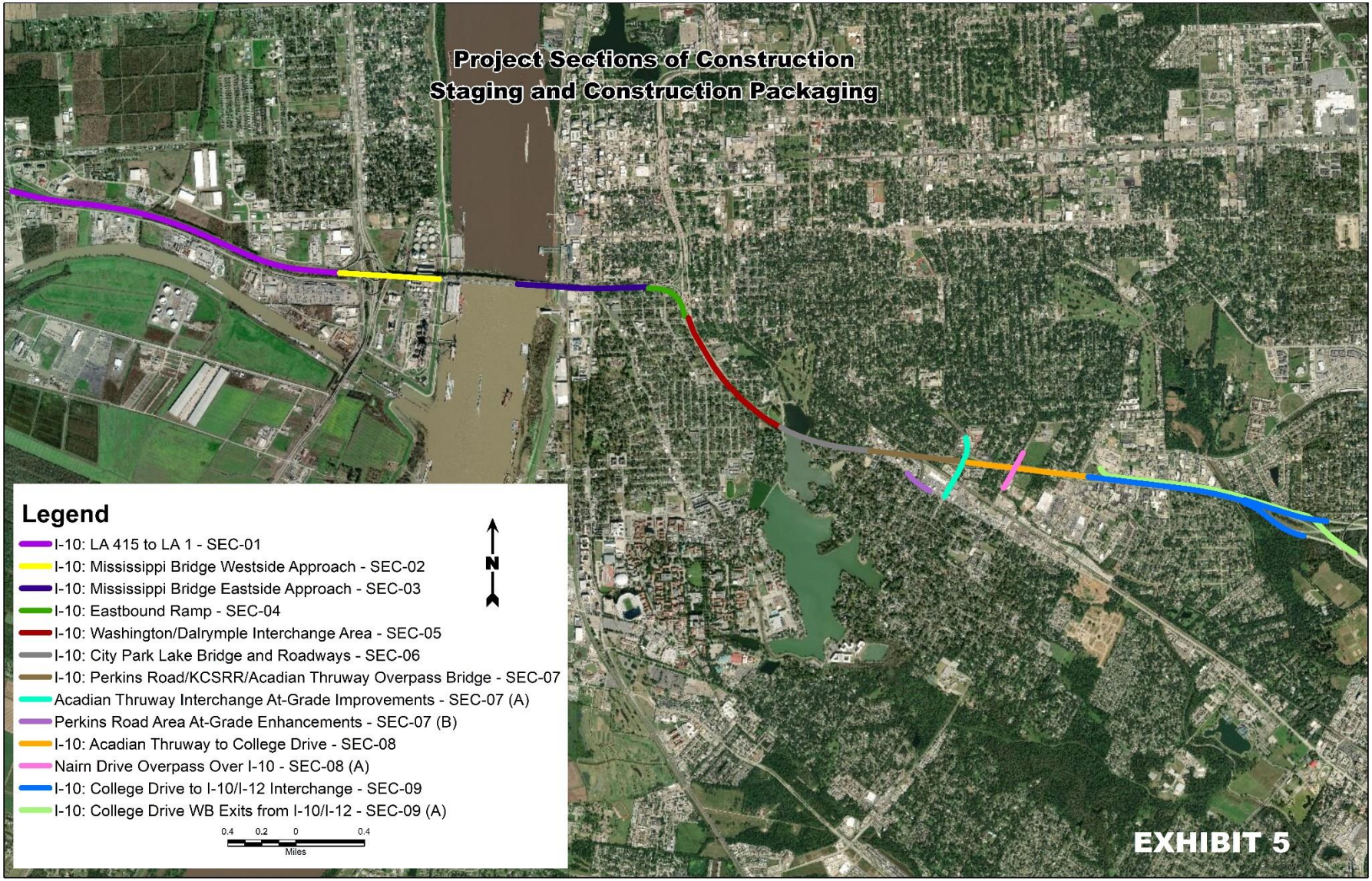
Sectioning the project into reasonable potential independent construction projects (SECs) allows for the development of more robust staging and construction packaging scenarios, programmatic scheduling, and corridor financial planning.

Following are recommended SECs for the I-10 project delineated from west to east through the corridor; they are visually represented in **Exhibit 5**.

- **SEC-01**
  I-10: LA 415 to LA 1 - (LA 415 to Base of Westside Approach of MRB)

  This segment consists of three-laning the at-grade roadways of I-10 in each direction from the LA 415 Interchange east to the beginning of the west approaches to the MRB. Lane balance can be maintained by adding/dropping the third lane in each direction at the LA 415 east side ramps and the LA 1 west side ramps.

EXHIBIT 5
RECOMMENDED SECTIONS OF CONSTRUCTION



- **SEC-02**
  I-10: Mississippi River Bridge Westside Approach –
  (Base of Westside Approach of MRB to Main Cantilever Truss)

  This section consists of proposed shoulder widening improvements, acceleration/deceleration lane extensions at the LA 1 ramps, and the continuation of a third westbound lane past the LA 1 WB exit ramp. This segment provides some capacity improvement by the addition of the third I-10 westbound lane and the improvement of the movements at the ramps. It also provides a reasonable safety improvement by adding outside shoulders to I-10 where practical.

- **SEC-03**
  I-10: Mississippi River Bridge Eastside Approach –
  (Main Cantilever Truss to I-10 EB/I-110 NB Diverge)

  This segment consists of proposed shoulder widening improvements, deceleration lane improvements at the Highland/Nicholson exit ramp and an acceleration lane extension at the St. Ferdinand/St. Louis entrance ramp. This segment provides only limited capacity improvement with the extension of the acceleration/deceleration ramps. It also provides a reasonable safety improvement by adding outside shoulders to I-10 where practical.

  The work required for **SEC-02** and **SEC-03** is similar in nature and magnitude and it would be reasonable to consider combining these two sections into one major construction project.

- **SEC-04**
  I-10: Eastbound Mainline (Ramp) – (I-10 EB/I-110 NB Diverge to I-10 EB/I-110 SB Merge)

  This segment consists of proposed shoulder widening improvements and increase of the superelevation to increase design speed. This segment provides very limited capacity improvement by widening shoulders and increasing operating speed. It also provides a reasonable safety improvement by adding full width shoulders where practical.

- **SEC-05**
  I-10: Washington/Dalrymple Interchange Area – (I-10/I-110 Interchange to Dalrymple)

  This segment consists of the four-laning of I-10 in each direction from the I-10/I-110 Interchange to Dalrymple. Also included are interchange modifications with the relocation of the Washington and Dalrymple EB Exit to a consolidated exit prior to the I-10/I-110 Eastbound merge. The WB exit to Dalrymple will be incorporated with a weaving set of ramps to provide for traffic to continue to Washington and Louise Street. In addition, an at-grade turnaround will be incorporated prior to Washington with the WB entrance providing an EB entrance to I-10 for traffic from Dalrymple.

  This segment provides limited mainline independent utility by providing a fourth lane in each direction for approximately 4,500 feet. The at-grade/interchange improvements will provide enhanced access through the Louise Street/Washington/Dalrymple area by eliminating the lane drop at the Washington EB Exit and by providing I-10 EB access from the Dalrymple/LSU area.

- **SEC-06**
  I-10: City Park Lake Bridge and Roadways – (Dalrymple to Elissalde Street)

  This segment consists of the four-laning of I-10 in each direction from Dalrymple to the beginning of the Perkins/Kansas City Southern Railroad (KCSRR)/Acadian Overpass Bridge. The major components are the improvements to the City Park Lake Bridge and the at-grade roadways to the east for approximately 2,000 feet.

  This segment provides additional mainline independent utility by providing a fourth lane in each direction for approximately 2,900 feet. This segment in conjunction with **SEC-05** *Washington/Dalrymple Interchange Area* will provide four lanes in each direction for approximately 7,400 feet.

- **SEC-07**
  I-10: Perkins/KCSRR/Acadian Overpass Bridge – (Elissalde Street to Acadian)

  This segment consists of four-laning the I-10 bridge in each direction from just east of Elissalde Street to the east side of Acadian. The Perkins WB Entrance Ramp and EB Exit Ramp will be removed. The Acadian Interchange will be improved to address traffic demand.

This segment provides additional mainline independent utility by providing a fourth lane in each direction for approximately 3,500 feet. This segment in conjunction with **SEC-05** *Washington/Dalrymple Interchange Area* and **SEC-06** *City Park Lake Bridge and Roadways* will provide four lanes in each direction for approximately 10,900 feet. This segment also provides enhanced safety and at-grade capacity improvements with the elimination of the Perkins Partial Interchange and improvements to the Acadian Interchange.

- **SEC-07(A)**
  I-10: Acadian Interchange At-Grade Improvements
  The at-grade improvements for the interchange may be considered a separate project or combined in **SEC-07**. These improvements must be completed to accommodate the additional traffic from the closure of the Perkins Partial Interchange

- **SEC-07(B)**
  I-10: Perkins Area At-Grade Enhancements
  The enhancement project planned for the former Perkins Partial Interchange area may be considered a separate project or combined in **SEC-07.** This project is described in Section 2.7.

- **SEC-08**
  I-10: Acadian to College Drive

  This segment consists of four-laning I-10 in each direction from just east of Acadian to just east of College. Minor adjustments to the ramps on the east side of the Acadian Interchange and the west side of the College Interchange are included in this segment. In addition, the Nairn Drive Overpass will be replaced in this segment.

  This segment provides additional mainline independent utility by providing a fourth lane in each direction for approximately 3,400 feet. This segment in conjunction with **SEC-05** *Washington/Dalrymple Interchange Area*, **SEC-06** *City Park Lake Bridge and Roadways* and **SEC-07** *Perkins/KCSRR/Acadian Overpass Bridge* will provide four lanes in each direction through the corridor from the I-10/I-110 Interchange to the I-10/I-12 Split.

- **SEC-08(A)**
  I-10: Nairn Drive Overpass Over I-10
  This new bridge can be separated out of **SEC-08** as a standalone project. This bridge must be replaced/extended prior to or in conjunction with the completion of **SEC-08.**

- **SEC-09**
  I-10: College Drive to I-10/I-12 Interchange

  This segment consists of five-laning I-10 EB to the I-10/I-12 Split. It also includes the option of providing dedicated WB exit ramps from I-10 and I-12 to a service road to access College Drive and a right exit to Trust Drive.

  - **SEC-09(A)**
    I-10: College Drive Westbound Exits from I-10/I-12
    The improvements to provide dedicated westbound exit ramps from I-10 and I-12 to a service road to access College Drive can be separated out of **SEC-09** as a standalone project. As stated above, this improvement provides a safety/capacity improvement for the westbound College Drive exit by eliminating the multilane weave required from I-10 westbound to the existing College Drive exit.

    SEC-09A, College Drive Flyover (H.013897) will be processed separately as a Categorical Exclusion due its ability to function as an independent project and to be designed and built predominantly within existing ROW.

2.5 Traffic Study

The traffic analysis conducted during the Feasibility Study confirmed that an additional travel lane in each direction on mainline I-10 would improve operations (travel time and throughput) and was a necessary component in an overall plan for the region. The additional lane would increase throughput by providing additional capacity which could decrease the duration of congestion. Bottlenecks on the mainline remain possible, even with the improvements.

The traffic analysis conducted for this EA also considered the impacts of interchange modifications at Washington/Dalrymple, Perkins/Acadian and at College. IMRs for each are in **Appendix B.**

Washington/Dalrymple

The interchange modifications at Washington/Dalrymple complete the partial interchange at I-10 and Washington/Dalrymple. The results of the traffic analysis for the consolidated Washington/Dalrymple interchange with roundabouts at the Washington ramp terminals and northern Dalrymple ramp terminal intersection indicated the following:

- The existing condition of reducing I-10 to a single lane EB at the I-110 junction is eliminated.
- Access to I-10 EB from Dalrymple and the LSU campus is provided.
- Ramp consolidation reduces friction on the mainline which will improve operations.
- Conversion of traditional intersections to roundabouts will reduce conflict points and improve operational conditions.

Perkins/Acadian

The Perkins/Acadian interchange modifications increase interchange spacing and improve the geometry of entrance ramps. Results of the traffic analysis for the Acadian interchange with the additional lane in each direction, the removal of the Perkins ramps, and the proposed ramp and surface street improvements indicated the following:

- Removing the Perkins interchange ramps reduces the number of conflict points on the mainline.
- Ramp terminal intersections on Acadian would service design year traffic volumes, including re-routed traffic from the removed Perkins ramps, without queuing on the offramps resulting in backup onto mainline I-10.
- Only one lane change from College would be required with the proposed improvements to continue on I-10 WB versus two in the existing and No-Build conditions.
- The ramp improvements would provide additional storage for queued vehicles in the Build condition and the longer merge length would be an improvement from the existing and No-Build conditions.

College

The proposed interchange modifications at College are to reduce conflict points on I-10 WB from the I-10/I-12 merge to College. The results of the analysis indicated the following:

- The weaving conflict points between the I-10/I-12 merge and College will be eliminated with the proposed modifications.

- The inclusion of the optional connection to Trust Drive will eliminate the weave on College in the short distance between the I-10 off-ramp and Corporate Boulevard (Corporate).

2.6 Alternatives Cost Comparison

Very general costs were developed during the feasibility stage of the proposed project. Due to the limited alternatives that were brought forward for continued study in this EA, the interchange alternatives were not further evaluated relative to cost, as they were eliminated from further study without the need to develop more detailed cost estimates.

Table 2-1 presents the preliminary costs from the Feasibility Study. The Opinion of Probable Cost developed for the proposed project is in **Appendix A** and summarized in **Table 2-2**.

TABLE 2-1
FEASIBILITY STUDY PRELIMINARY COSTS

Alternative	2016 Estimated Cost (in Millions)
One Travel Lane (each direction)	$350
Washington (several interchange concepts)	$20 million to $150 million
Dalrymple (several interchange concepts)	$40 million to $50 million
Washington/Dalrymple consolidated	$60 million to $70 million
Perkins	ramp removal was not estimated
Acadian	$20 million to $50 million
College	directional ramps $60 million

TABLE 2-2
OPINION OF PROBABLE COST

SECTION OF INDEPENDENT UTILITY	DESCRIPTION	CONSTRUCTION COST	ENGINEERING & PROJECT COSTS	UTILITY COSTS	RIGHT OF WAY & RELOCATION COSTS	TOTAL PROJECT COST
SEC-01	I-10: LA 415 to LA 1	$25,900,000	$4,921,000	$1,036,000	$0	$31,857,000
SEC-02	I-10: MRB Westside Approach	$108,100,000	$20,539,000	$4,324,000	$4,388	$132,967,388
SEC-03	I-10: MRB Eastside Approach	$135,900,000	$25,821,000	$5,436,000	$2,410	$167,159,410
SEC-04	I-10 Eastbound Ramp	$35,200,000	$6,688,000	$1,408,000	$2,556,107	$45,852,107
SEC-05	I-10: Washington/Dalrymple I/C Area	$169,200,000	$32,148,000	$6,768,000	$14,339,936	$222,455,936
SEC-06	I-10: City Park Lake Bridge and Roadways	$92,100,000	$17,499,000	$3,684,000	$1,322,873	$114,605,873
SEC-07	I-10: Perkins/KCSRR/Acadian Overpass	$183,800,000	$34,922,000	$7,352,000	$9,977,121	$236,051,121
SEC-07(A)	Acadian Thwy I/C At-Grade Improvements	$11,900,000	$2,261,000	$476,000	$41,532	$14,678,532
SEC-07(B)	Perkins Rd Area At-Grade Improvements	$700,000	$133,000	$28,000	$0	$861,000
SEC-08	I-10: Acadian Thwy to College Dr	$66,000,000	$12,540,000	$2,640,000	$16,497	$81,196,497
SEC-08(A)	Nairn Drive Overpass over I-10	$22,200,000	$4,218,000	$888,000	$1,956	$27,307,956
SEC-09	I-10: College Drive to I-10/I-12 I/C	$21,800,000	$4,142,000	$872,000	$12,463	$26,826,463
I-10 Corridor Totals		$872,800,000	$172,311,000	$36,276,000	$28,275,281	**$1,101,819,281**

Note: All costs are 2019 dollars.

CHAPTER 3.0

EXISTING ENVIRONMENT, CONSEQUENCES, AND MITIGATION

3.0 EXISTING ENVIRONMENT, CONSEQUENCES, AND MITIGATION

Figure 1, located in Chapter 1, is the project study area. The project area follows I-10; therefore, it is generally linear in nature, and starts at LA 415 in West Baton Rouge Parish and ends at Essen Lane on I-10 and I-12 in East Baton Rouge Parish, Louisiana. The existing environment, environmental consequences associated with implementing the No-Build Alternative and Preferred Alternative, and potential permits and mitigation measures are included in this chapter. All agency correspondence noted in this chapter are included as **Appendix C** in chronological order, unless stated otherwise.

Table 3-1 provides a summary of potential impacts associated with the project alternatives: the Preferred Alternative and the No-Build alternative.

TABLE 3-1
POTENTIAL IMPACTS ASSOCIATED WITH THE PROJECT ALTERNATIVES

Criteria	Preferred Alternative	No-Build Alternative
Purpose and Need		
Meets Purpose and Need	Yes	No
Potential Wetlands		
Jurisdictional Wetlands or Other Waters	<0.02 acres Other Waters	0 acres
Threatened/Endangered/Protected Species		
Potential Impact to Protected Species	No known species	No known species
Land Use		
Floodplains	0.46 acres	Future potential[1]
Hazardous Waste[2]		
Underground Storage Tanks (Adjacent with Concerns)	2	0
Other Adjacent Areas with Concerns (former auto shops, gas stations, etc.)	6	0
Cultural Resources		
Historic Structures Affected	17	0
Archaeological Resources Affected	0	0
Section 4(f) Resources		
Section 4(f) Use (same historic structures)	17	0
Section 4(f) *de minimis* historic	5 – four residences and one business	0
Section 4(f) *de minimis* parks/recreation	2 – East Polk Street Park/City Park Lake Trail	0
Community Impacts		
Residential structures	28	0
Commercial structures	5	0
Properties	111 (not including the 33 structures)	0

Notes:
[1] Future potential relates to the need to do something to address congestion, any construction in the I-10 ROW has the potential to affect some of the resource since it is in existing ROW.
[2] USTs noted have been determined to require additional investigation. Other concerns are areas where additional investigation may be warranted.

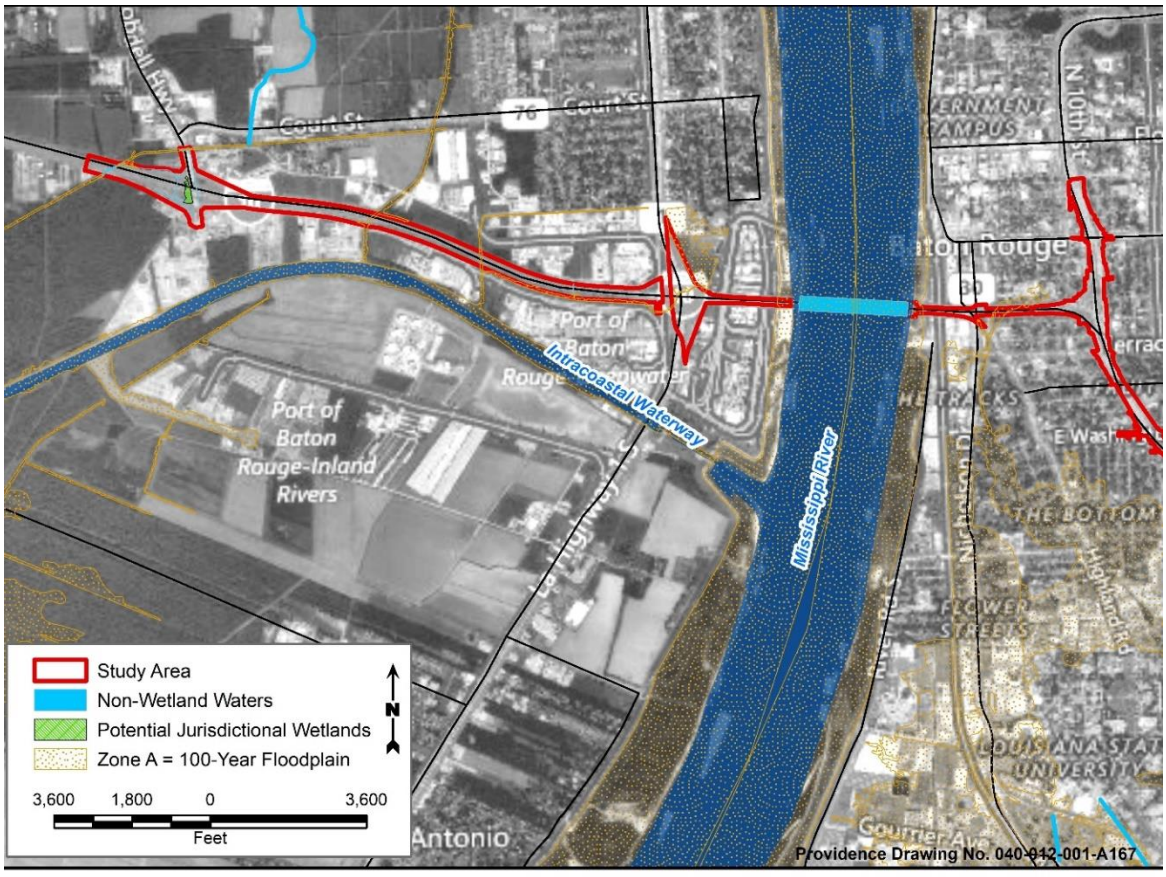
3.1 Water Resources

3.1.1 Existing Environment

Surface Water

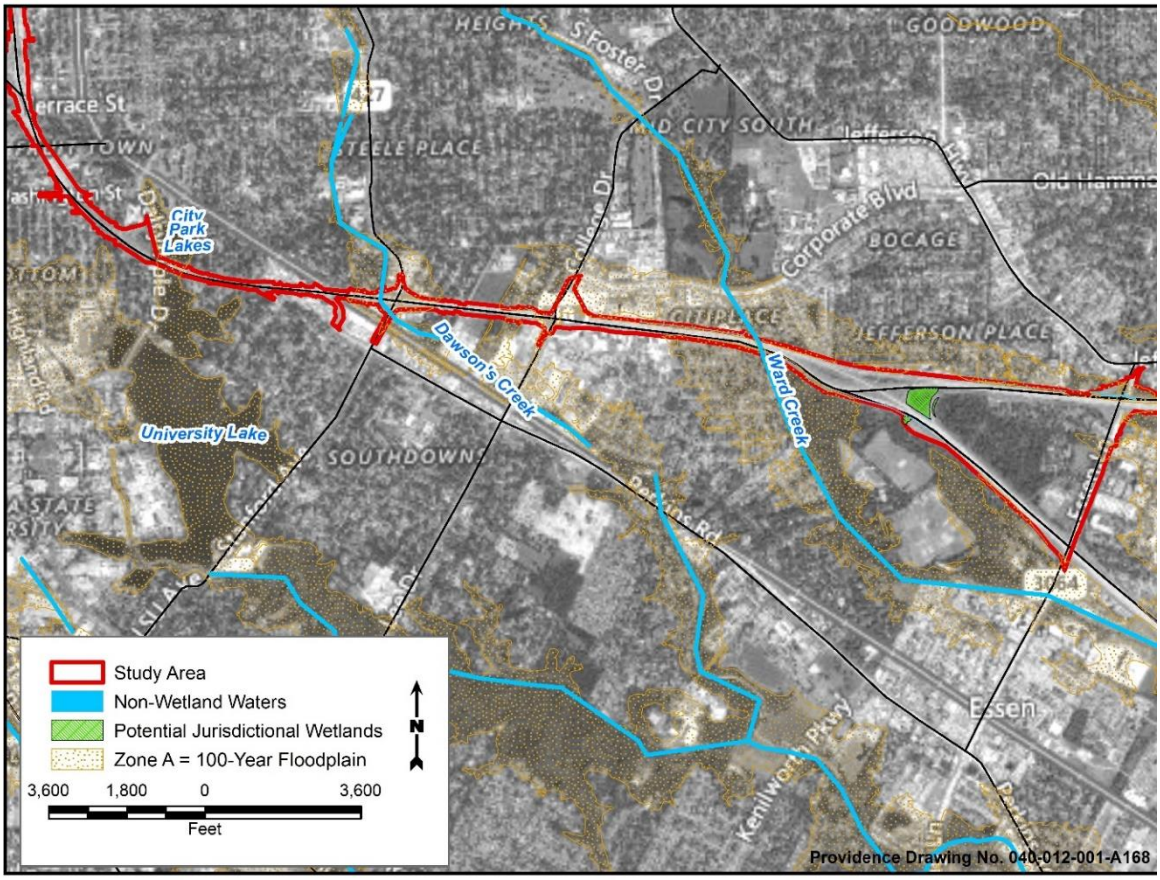
Water quality in the project study area is affected by both point source and nonpoint source discharges. Point sources include industrial, municipal, and sewer discharges. Nonpoint sources include storm water runoff, landscape maintenance activities, agriculture, and natural sources. The Mississippi River is the largest water body in the project study area. Smaller waterways in the general project study area include Bayou Choctaw, Bayou Manchac, Broussard Bayou, City Park Lake, University Lakes, Ward Creek, and Dawson Creek. Water resources are shown on **Figures 2a** and **2b.**

FIGURE 2a
WEST BATON ROUGE PARISH WATER RESOURCES



The Q3 Flood Data was obtained from the Flood Insurance Rate Maps (FIRMS) published by FEMA. Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 2b
EAST BATON ROUGE PARISH WATER RESOURCES



The Q3 Flood Data was obtained from the Flood Insurance Rate Maps (FIRMS) published by FEMA. Base map comprised of ESRI World Imagery Maps dated June 2013.

A review of the 2016 *Louisiana Water Quality Inventory: Integrated Report (305(b) and 303(d))* identifies the project study within the Lake Maurepas and Lower Mississippi Basins. The following information on each subsegment was detailed in the 2016 Louisiana Water Quality Inventory:

- Subsegment 070301 – Mississippi River – from Monte Sano Bayou to Head of Passes. This subsegment is fully supporting its designated uses including, primary contact recreation, secondary contact recreation, fish and wildlife propagation, and drinking water supply.
- Subsegment 120103 – Bayou Choctaw – from Bayou Poydras to Bayou Grosse Tete. This subsegment does not meet the designated use of fish and wildlife propagation. Low dissolved oxygen believed to be due to agriculture is listed as the cause of impairment for fish and wildlife propagation. A dissolved oxygen Total Maximum Daily Load (TMDL) was developed for this subsegment. This subsegment is on Louisiana's 2016 Water Quality Inventory: Integrated Report (305(b)/303(d)) list.

- Subsegment 040201 – Bayou Manchac – from headwaters to Amite River. This subsegment is listed as not meeting the designated use of fish and wildlife propagation. This subsegment was previously listed as impaired for dissolved oxygen for which a TMDL was developed. Nitrate/nitrite (nitrite + nitrate as N), phosphorus (Total), and dissolved oxygen believed to be elevated due to on-site treatment systems (septic systems and similar decentralized systems) and natural sources are listed as the causes of impairment for fish and wildlife propagation. In addition, chloride, sulfates, and total dissolved solids believed to be elevated due to natural sources are also listed as the causes of impairment for fish and wildlife propagation. This subsegment is on Louisiana's 2016 Water Quality Inventory: Integrated Report (305(b)/303(d)) list.
- Subsegment 040602 – Lake Maurepas. This subsegment does not meet the designated use of fish and wildlife propagation. Non-native aquatic plants believed elevated due to introduction of non-native organisms (accidental or intentional) and low dissolved oxygen levels are listed as the causes of impairment for fish and wildlife propagation. This subsegment is on Louisiana's 2016 Water Quality Inventory: Integrated Report (305(b)/303(d)) list.

Groundwater

According to the United States Environmental Protection Agency (USEPA), a Sole Source Aquifer (SSA) is an aquifer that normally supplies at least 50% of the drinking water for a particular community or area where no viable alternative drinking water source exists. USEPA mapping data shows the entire project study area falls within the Southern Hills Aquifer System (Buono, 1983). The project study area also falls within the Alluvial and Southeast Louisiana aquifer systems. Correspondence from the USEPA's SSA program indicated that the project was not expected to adversely affect the aquifer.

A search was performed for water wells, including public water supply wells, using the Louisiana Department of Natural Resources (LDNR) Strategic Online Natural Resources Information System (SONRIS) database. The SONRIS database includes all water wells registered to LA DOTD. A Public Water System is any water system that provides water to at least 25 people for a minimum of 60 days annually. A total of 21 wells are within the buffered project study area of this project, including two active abandoned observation wells, two active monitor wells, eight active piezometer wells, and six plugged and abandoned wells. **Figures 3a** and **3b** show all water wells in the vicinity of the project study area. It is possible that additional wells have been drilled in the project study area but are not registered.

FIGURE 3a
WEST BATON ROUGE PARISH AQUIFERS AND WATER WELLS

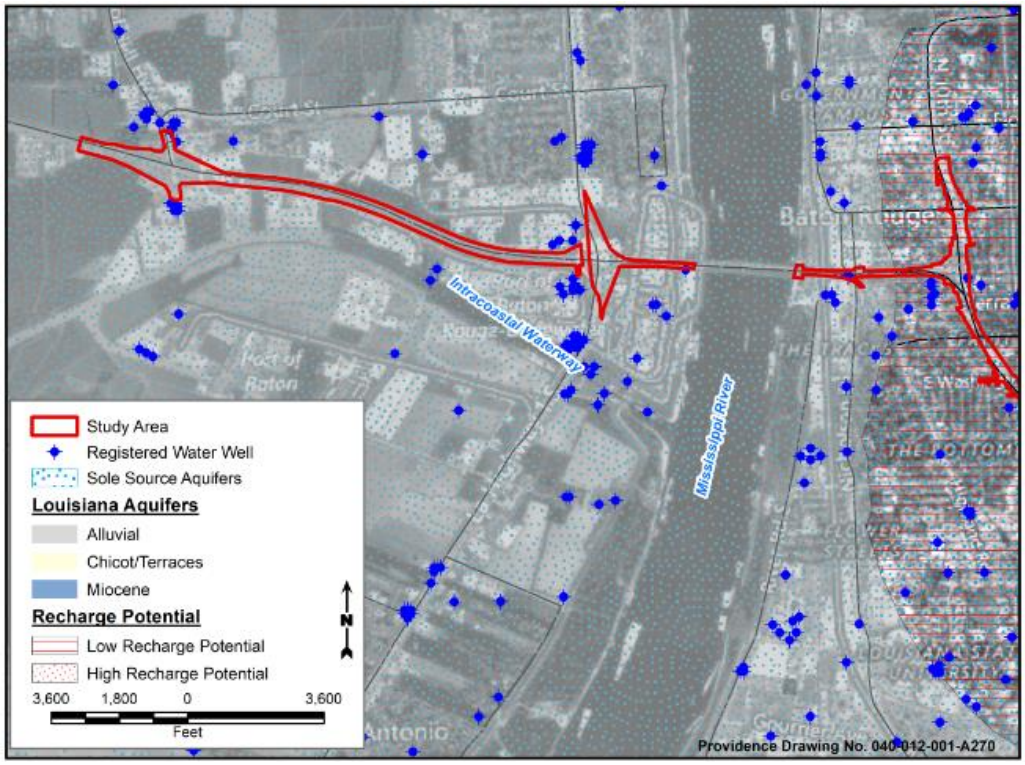
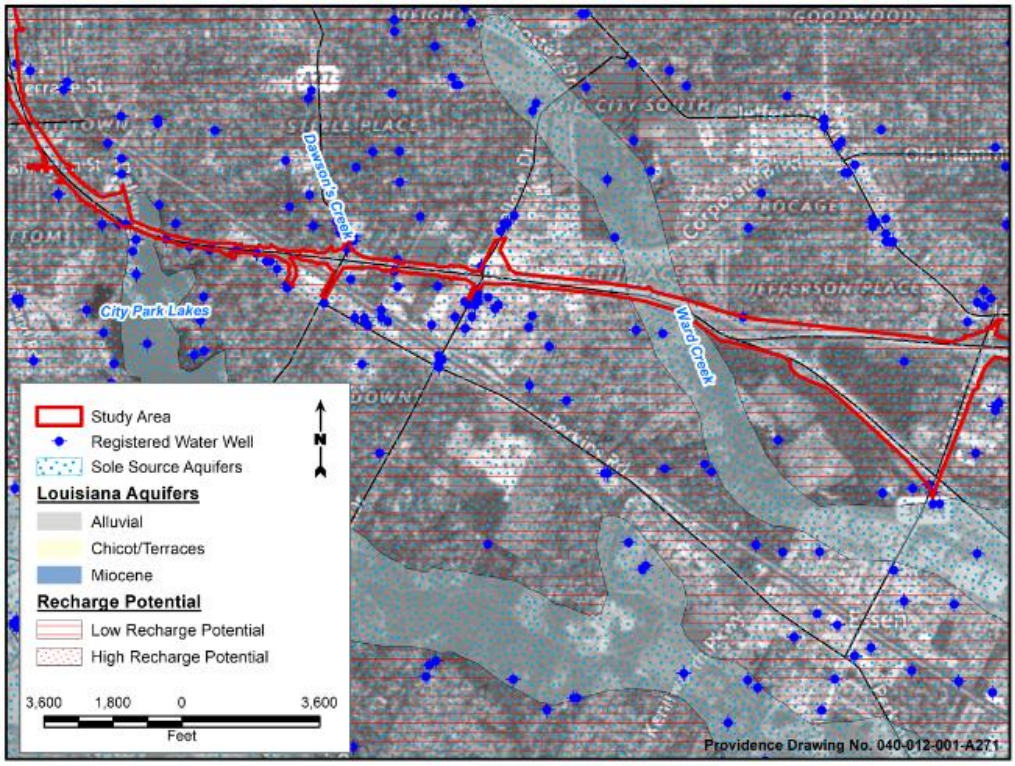


FIGURE 3b
EAST BATON ROUGE PARISH AQUIFERS AND WATER WELLS



3.1.2 Environmental Consequences

The No-Build Alternative would not be expected to impact existing surface water, groundwater quality, recharge potential, or area water wells.

The potential for sedimentation of erosion materials into the nearby drainage ditches and adjacent wetlands caused by storm water runoff could increase during construction activities associated with the Preferred Alternative. Exposed soils from construction activities are more susceptible to erosion. Appropriate Best Management Practices (BMPs) to be implemented as part of the Storm Water General Permit for Construction Activities will minimize and mitigate for construction-related impacts to area waterways.

Presently, I-10 has twin bridges that cross City Park Lake. These bridges will be replaced under the Preferred Alternative. BMPs will be implemented to contain turbidity and other construction caused potential impacts to the lake during the replacement of the bridges. Construction methods, which could include offsite fabrication of bridge decks, will be designed to minimize potential water quality impacts.

The Southern Hills SSA covers the entirety of the project study area. The project involves widening an existing highway by one travel lane in both directions. There is minimal potential for impact on groundwater; no active water wells of any kind are expected to be impacted. Water resources in the project area are shown on **Figures 2a** and **b and 3a** and **b.**

3.2 Wetlands

3.2.1 Existing Environment

Wetlands are defined jointly by the USACE and the USEPA as “those areas that are inundated or saturated by surface or groundwater, at a frequency and duration sufficient to support, and that under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (40 CFR 230.3 and 33 CFR 328.3).

In compliance with EO 11990 a wetland finding was conducted in the project study area to identify potential jurisdictional wetlands. Approximately 9.77 acres of potential jurisdictional wetlands were identified in the project study area.

Other Waters of the US (Other Waters), which include navigable waters, lakes, rivers, streams, mudflats, etc. are also identified during wetlands finding field activities. Ditches and drainageways may be deemed Other Waters. **Figures 2a** and **2b** show wetland and Other Waters in the project study area. Drainageways that may be considered Other Waters will not be readily discernible in the figures due the scale.

A search was performed for properties enrolled in the Wetlands Reserve Program (WRP). No WRP properties were found within or adjacent to any of the alternatives.

3.2.2 Environmental Consequences and Mitigation

The No-Build Alternative does not involve any ground disturbances or ROW acquisitions. Therefore, the No-Build Alternative will not have any adverse impacts on jurisdictional wetlands or Other Waters of the United States.

Personnel visited the project site on June 26, 2017 and collected field data on the three diagnostic wetland parameters: soils, vegetation, and hydrology. Approximately 9.77 acres of potential jurisdictional wetlands and 2.93 acres (~19,670 linear feet) of Other Waters were observed within the proposed ROW of the Preferred Alternative. A jurisdictional determination was issued by the USACE on June 25, 2018, that officially agreed with the potential jurisdictional acres presented in the wetland data report. **Figures 4a** and **4b** from the Wetlands Finding Report (**Appendix D** Figures 3b and 3g) demonstrate the jurisdiction wetlands in the ROW.

The proposed ROW includes existing LA DOTD ROW for I-10. Of the 9.77 acres of jurisdictional wetlands observed, 8.12 acres are located between the I-12 westbound to I-10 eastbound flyover ramp and the I-10 westbound to I-12 eastbound ramp just west of the I-10/Essen Lane interchange. No work is proposed within existing ROW in this area. The proposed flyover ramp is located to the west of the wetland area. The remaining 1.65 acres of jurisdictional wetlands are located on the west side of LA 415 between the ramps and under I-10 in an area where no improvements are proposed.

The proposal to include an option for a dedicated right turn to Trust Drive off the College westbound off ramp will cross over a drainageway, a portion of which is considered Other Waters. Approximately 0.02 acres of Other Waters may be affected by the proposed project.

Other Waters are located adjacent to the widened exit lane for College that will result from the flyover. These waters will be protected during construction as required by the Storm Water Pollution Prevention Plan that is a part of the construction permit process. The option of a Trust Drive dedicated ramp may result in a crossing of Other Waters that would require the submittal of a Nationwide Permit request under the Nationwide Permit program managed by the USACE.

FIGURE 4a
JURISDICTIONAL WETLANDS IN THE PROPOSED ROW IN WEST BATON ROUGE PARISH

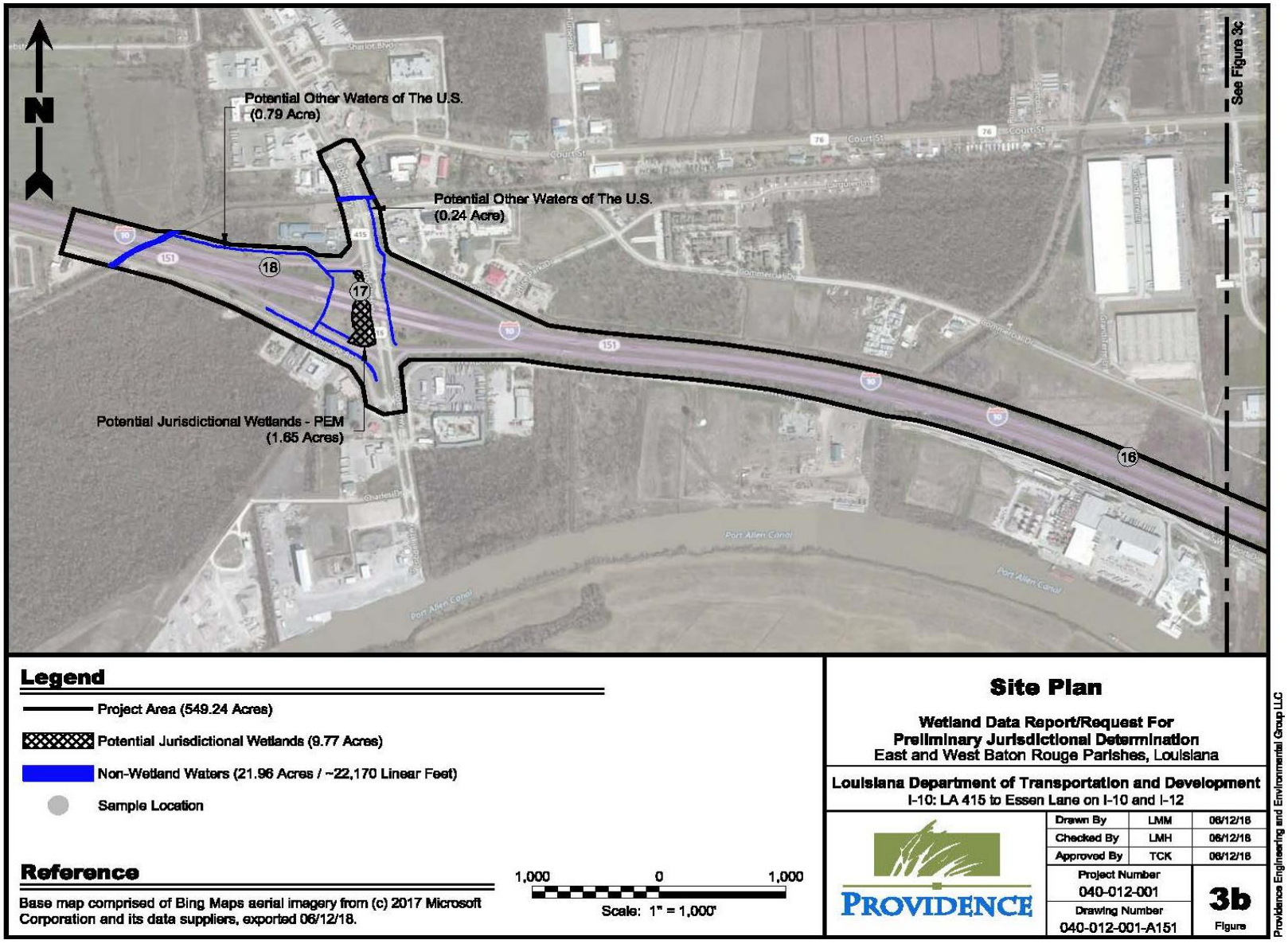
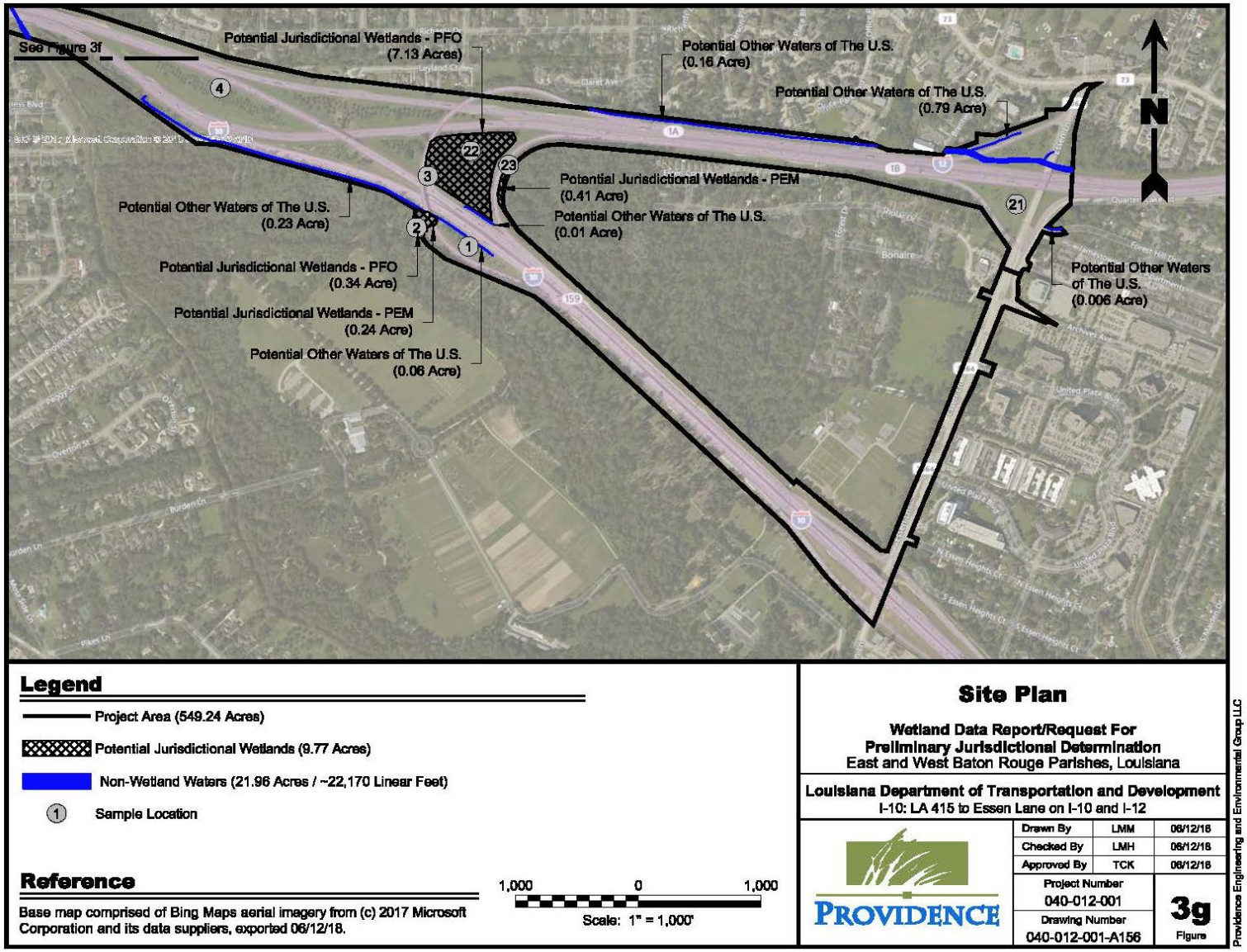


FIGURE 4b
JURISDICTIONAL WETLANDS IN THE PROPOSED ROW IN EAST BATON ROUGE PARISH



3.3 Threatened and Endangered Species

3.3.1 Existing Environment

The Endangered Species Act of 1973 allows the United States Fish and Wildlife Service (USFWS) to manage threatened and endangered species and their ecosystems. Screening for trust resources was conducted using the USFWS's Information for Planning and Conservation (IPaC) tool. Four aquatic species (two fish, one clam, and the West Indian Manatee) were identified associated with East and West Baton Rouge Parishes and 25 birds of conservation concern noted.

3.3.2 Environmental Consequences

Neither the No-Build nor Preferred Alternative are anticipated to have adverse effects on threatened, endangered, or state rare species. According to correspondence from the USFWS dated March 21, 2017, and LDWF dated March 31, 2017, no impacts to rare, threatened, or endangered species or critical habitats are expected from the proposed project.

3.4 Wildlife

3.4.1 Existing Environment

Per correspondence with the LDWF dated March 31, 2017, no state or federal parks, wildlife refuges or management areas, or scenic streams are in the project area. As the Mississippi River segments the project study area, a great number of species of mammals, fish, birds, particularly those waterfowl and migratory birds that utilize the Mississippi Flyway, reptiles, and amphibians utilize this habitat over the majority of urban habitat in the study area.

Mammals in the project study area include those that have adapted to life in more urban environments. Within the project study area, mammals such as deer (more common around the Mississippi River and batture habitat), squirrels, rabbits, raccoons, opossum, rats, and mice would be expected to be present.

In addition, there are reptiles and amphibians more common along the roadside ditches within the project study area. Snakes, turtles, frogs, salamanders, and lizards would be expected to be encountered in the project study area.

Habitat within the project study area supporting various species of birds includes agricultural/open land and forested habitats. Agricultural and forested habitats in the project study area provide open spaces for nesting

and/or foraging for raptors and other species. Ward Creek which traverses the project study area, provides habitat suitable for some wading birds.

Aquatic habitat not associated with the Mississippi River, primarily Ward Creek, in the project study area is freshwater supporting gar, largemouth bass, crappie, bluegill, red ear sunfish, warmouth, and mosquitofish, among others.

3.4.2 Environmental Consequences

Neither the No-Build nor Preferred Alternative are expected to have adverse effects on area wildlife populations. The Preferred Alternative ROW is predominately controlled access interstate that does not provide suitable habitat for wildlife. Those areas where ROW will be acquired are adjacent to the interstate and may support wildlife adapted to urban environments that tend to relocate when disturbed.

3.5 Floodplains

3.5.1 Existing Environment

EO 11988 “Floodplain Management” requires federal agencies to avoid actions, to the extent practicable, which will result in the location of facilities within floodplains and/or affect floodplain values. Facilities located in a floodplain may be damaged or destroyed by a flood or may change the flood-handling capability of the floodplain or the pattern or magnitude of the flood flow. The Mississippi River’s historical floodplains are protected from flooding associated with high river elevations by the mainline Mississippi River Levee system. As this levee system provides protection for a myriad of land uses, construction activities within 1,500 feet of the toe of the levee require separate analysis and permitting.

Federal Emergency Management (FEMA) Flood Insurance Rate Maps (FIRMS) were used to determine the extent of the 100-year floodplain in the project study area. Approximately 709 acres of 100-year floodplain are in Zones A and AE (see **Figures 2a** and **2b**).

3.5.2 Environmental Consequences

The No-Build Alternative is not expected to have impact on floodplains or future flooding in the area.

FEMA’s Mitigation Division did not respond to the Solicitation of Views (SOV) letter sent relative to the Preferred Alternative. An SOV response was received from the LA DOTD Floodplain Management Program Coordinator dated April 3, 2017, which included Flood Insurance Rate Maps for the project and a request to ensure the project does not result in an increased risk of flooding during or after construction (**Appendix C**). The

response provided local floodplain administrators contact information. Local floodplain officials were consulted, no written response was provided.

To minimize potential impact to floodplains, detailed hydrologic and hydraulic studies will be conducted during final design to determine any water surface elevation impacts of placing fill within the floodplain. These studies should show that no increase in flood level due to construction will occur.

The LA DOTD will review these studies in order to ensure that the most feasible mitigation measures are being taken to provide adequate assurance to the adjacent properties that no increased risk of flooding will be a result the construction and subsequent operation of the proposed project.

3.6 Scenic Streams

The Louisiana Natural and Scenic River Act of 1970 established the Louisiana Natural and Scenic River System. A letter from the LDWF regarding the lack of scenic streams in the project study area is in **Appendix C**.

The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve rivers throughout the country demonstrating “outstanding natural, cultural, and recreational values in a free-flowing condition”. There is only one waterway in Louisiana protected under this program, Saline Bayou, and it is not located in East or West Baton Rouge Parish.

The NPS’s Nationwide Rivers Inventory “is a listing of more than 3,400 free-flowing river segments in the United States that are believed to possess one or more outstanding remarkable natural or cultural values judged to be of more than local or regional significance”. According to the NPS’s Nationwide Rivers Inventory webpage, there are 11 free-flowing Louisiana Segments, none of which are in the project study area.

3.7 Noise

3.7.1 Existing Environment

The proposed project is a Type I project in accordance with the FHWA noise regulation, *Procedures for Abatement of Highway Traffic and Construction Noise*, *23 CFR 772*. Therefore, a noise study was prepared in accordance with the FHWA noise regulation and the LA DOTD *Highway Traffic Noise Policy* (July 2011) to identify noise impacts and evaluate noise abatement for those impacts. **Appendix E** includes the Traffic Noise Analysis Technical Report.

The areas adjacent to I-10 within East and West Baton Rouge Parishes are heavily populated with many noise-sensitive land uses. The effects on these land uses will vary depending on location and the degree of noise sensitivity.

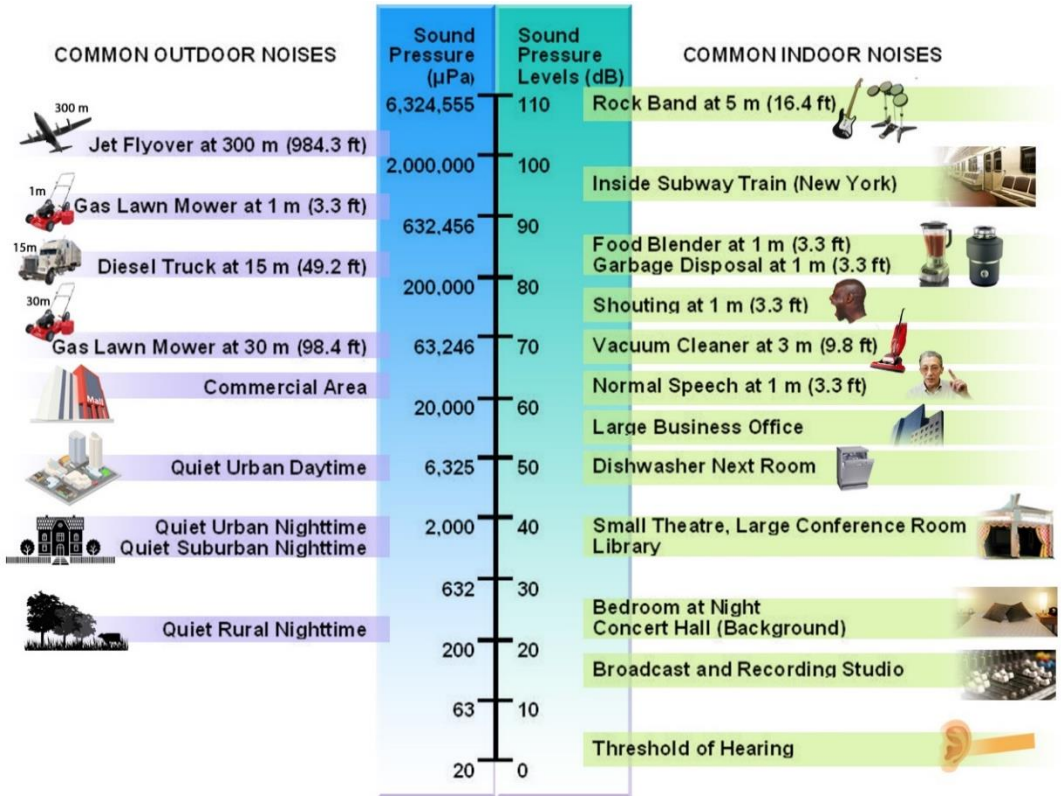
Per the FHWA noise regulation, impact is determined by comparing future project noise levels with the project to thresholds established by FHWA and to existing noise levels. These thresholds are discussed following an overview of noise terminology.

Traffic Noise Terminology

Traffic noise levels are expressed in terms of the hourly, A-weighted sound level in decibels (dBA). The A-weighting refers to the amplification or attenuation of the different frequencies of the sound (subjectively, the pitch) to correspond to the way the human ear “hears” these frequencies. Generally, when the sound level exceeds the mid-60 dBA range, outdoor conversation in normal tones at a distance of three feet becomes difficult. **Exhibit 6** shows some common indoor and outdoor sound levels.

A 9-10 dB increase in sound level is typically judged by the listener to be twice as loud as the original sound while a 9-10 dB reduction is judged to be half as loud. Doubling the number of sources (i.e. vehicles) will increase the hourly sound level by approximately 3 dB, which is usually the smallest change in hourly A-weighted traffic noise levels that people can detect without specifically listening for the change.

EXHIBIT 6
COMMON SOUND LEVELS



Because most environmental noise fluctuates from moment to moment, it is standard practice to condense data into a single level called the equivalent sound level (L_{eq}). The L_{eq} is a steady sound level that would contain the same amount of sound energy as the actual time-varying sound evaluated over the same time-period. The L_{eq} averages the louder and quieter moments but gives much more weight to the louder moments. For traffic noise assessment purposes, L_{eq} is typically evaluated over the worst one-hour period and is defined as L_{eq} (h).

The term insertion loss (IL) is used to describe the noise reduction at a location after a noise barrier is constructed. For example, if the L_{eq} (h) at a residence before a barrier is constructed is 75 dBA and the L_{eq} (h) after a barrier constructed is 65 dBA, then the insertion loss would be 10 decibels (dB).

Criteria for Determining Noise Impacts

The FHWA noise regulation and LA DOTD's noise policy state that when traffic noise impacts have been identified, then noise abatement should be considered. Noise impact is determined by comparing future "design year" worst-hour noise levels (L_{eq}(h)) at areas of frequent human use to: (1) a set of Noise Abatement Criteria (NAC) for different land use categories, and

(2) existing noise levels (L_{eq}(h)). **Table 3-2** shows the land uses that are classified as Activity Categories A through G and the corresponding NAC.

A land use can be impacted in either of two ways:

1. The predicted noise level approaches or exceeds the NAC, even if there is not a substantial increase over the existing levels. LA DOTD defines “approach” as 1 dB below the NAC. For example, the NAC for Activity Category B and C land uses is 67 dBA. An impact would occur if the predicted noise level is 66 dBA or higher at an area of frequent exterior human use for a land use in either category.
2. The predicted noise level exceeds the existing noise level by 10 dB or more, even if the noise level does not approach or exceed the NAC.

Noise Study Areas

The study identified 16 Noise Study Areas (NSAs) containing noise-sensitive land uses (**Table 3-3**). As shown in **Table 3-3**, each NSA includes varying combinations of Activity Category B, C, D, and E land uses. The primary land use along the project corridor is Activity Category B residential (single family residences as well as multi-family dwellings). The six (6) NSAs between Acadian and the east project limit at Essen Lane currently have noise barriers. The ten (10) NSAs between the west project limit at LA 415 and Acadian do not have noise barriers.

TABLE 3-2
NOISE ABATEMENT CRITERIA

Activity Category	L_{eq}(h) dBA	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	67	Exterior	Residential
C[1]	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[1]	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	–	–	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	–	–	Undeveloped lands that are not permitted.

[1] Includes undeveloped lands that are permitted for this activity category.

TABLE 3-3
NOISE STUDY AREAS

Noise Study Area	Existing Noise Barrier?	Description	
EB1	No	South of I-10, between the Mississippi River and East Washington	
		Activity Category B (exterior)	Numerous single-family residences
		Activity Category C (exterior)	Baranco-Clark YMCA playground
		Activity Category D (interior)	Fairview Baptist Church, Progressive Baptist Church, New Jerusalem Baptist Church, Neeley United Methodist Church
EB2	No	South of I-10, between East Washington and Dalrymple	
		Activity Category B (exterior)	Numerous single-family residences
		Activity Category C (exterior)	East Polk Street Park (basketball court, playground, baseball)
		Activity Category D (interior)	Calvary Third Baptist Church
EB3a	No	South of I-10, between East Lakeshore Drive and Christian Street	
		Activity Category B (exterior)	Numerous single-family residences, including townhomes on Fiero Street
EB3b	No	South of I-10, between Christian Street and South Acadian	
		Activity Category B (exterior)	Numerous single-family residences, including townhomes on Christian Street, and Hollydale Ave, and some apartments above a commercial restaurant
		Activity Category E (exterior)	Saltgrass Steakhouse patio, Schlittz and Giggles patio
EB4	Yes	South of I-10, between South Acadian and College	
		Activity Category B (exterior)	Numerous single-family residences
		Activity Category C (exterior)	Nairn Park (playground, ball fields, basketball court, picnic area)
		Activity Category E (exterior)	Courtyard by Marriott (Acadian Centre) pool
EB5	Yes	South of I-10, between College and the I-10/I-12 split	
		Activity Category B (exterior)	Numerous single-family residences
		Activity Category E (exterior)	Hampton Inn pool, Crowne Plaza pool, Holiday Inn pool, and the Doubletree Hotel patio
EB6	Yes	South of I-12, between I-the 10/I-12 split and Essen Lane	
		Activity Category B (exterior)	Numerous single-family residences
WB1	No	North of I-10 and west of I-110, between the Mississippi River and Government Street	
		Activity Category B (exterior)	Numerous single-family residences
		Activity Category C (exterior)	Foreign Language Academic Immersion Magnet (FLAIM) Elementary School playground, Odell Williams Museum of African American History
		Activity Category D (interior)	Liberty Chapel Baptist Church, St. Luke Baptist Church, St. Agnes Catholic Church

Noise Study Area	Existing Noise Barrier?	Description	
WB2	No	East of I-110 and I-10, between Government Street and East Washington	
		Activity Category B (exterior)	Numerous single-family residences, some duplexes, and apartments
		Activity Category C (exterior)	St Francis Xavier Church exterior area and courtyard, St Francis Xavier Early Child Development playground, St Francis Xavier Child Care Center playground, Brooks Park swimming pool and playground, Expressway Park playground, picnic area, basketball court and football field
		Activity Category D (interior)	McKowen Missionary Baptist Church, New Prospect Missionary Baptist Church, McKinley Middle Magnet School
WB3	No	North of I-10 between East Washington and Dalrymple	
		Activity Category B (exterior)	Numerous single-family residences
		Activity Category C (exterior)	Knock Knock Children's Museum picnic area
		Activity Category D (interior)	Ebenezer Baptist Church
WB4a	No	North of I-10 between East Lakeshore Drive and Perkins	
		Activity Category B (exterior)	Numerous single-family residences
		Activity Category E (exterior)	Duvic's patio
WB4b	No	North of I-10 between Perkins and South Acadian	
		Activity Category B (exterior)	Numerous single-family residences
		Activity Category C (exterior)	Madera Verde Apartments courtyard
		Activity Category E (exterior)	Digiulio Brothers patio, City Pork patio
WB5	Yes	North of I-10 between South Acadian and College	
		Activity Category B (exterior)	Numerous single-family residences
		Activity Category D (interior)	Cathedral of Faith Ministry Church
		Activity Category E (exterior)	Radisson Hotel pool
WB6	No	North of I-10 between College and the I-10/I-12 split	
		Activity Category E (exterior)	Tru by Hilton Hotel pool, Baton Rouge Marriott pool, Richmond Inn & Suites pool, Homewood Suites pool
WB7	Yes	North of I-12 between the I-10/I-12 split and Essen Lane	
		Activity Category B (exterior)	Numerous single-family residences, townhomes and apartments
		Activity Category C (exterior)	Jefferson Place Apartments & Condominiums pool
WB8	No	North of I-10 between LA 415 and 2179 Commercial Drive	
		Activity Category B (exterior)	Allen Courts Apartments, Westport Village Apartments, Riverwest Apartments
		Activity Category E (exterior)	Hampton Inn & Suites pool, Comfort Suites pool, La Quinta Inn & Suites pool

Existing Noise Environment

Noise measurements were conducted at several LA DOTD-approved noise-sensitive land uses in the project area on March 20-22, 2018. Existing noise levels at the exterior measurement locations were between 59 dBA and 75 dBA. The lower noise levels were recorded at locations farther from I-10 or at receptors located behind existing noise barriers. Noise levels in the upper 60 dBA to low 70 dBA range were recorded at the first-row residences near I-10 and I-12 that are not behind an existing noise barrier.

The measured noise levels at several locations were compared to or "validated" against the existing noise levels predicted by the FHWA Traffic Noise Model (TNM 2.5) computer program. The predicted noise levels were within 3 dBA of the measured noise levels, so the modeling is considered validated in accordance with LA DOTD's noise policy.

3.7.2 Environmental Consequences and Mitigation

The noise study identified the noise-sensitive land uses that would be impacted by the project and evaluated noise abatement to mitigate those impacts. Per the FHWA noise regulation, impact is determined by comparing future noise levels on the project to thresholds established by FHWA and to existing noise levels. The complete Noise Analysis is in **Appendix E** and covers both the No-Build and Preferred Alternative.

3.7.2.1 Existing and Future Noise Levels and Impacts

The FHWA TNM 2.5 computer program was used to calculate worst hour noise levels for the receptors for existing conditions and for the future Build and No-Build Alternatives. Receptors were modeled with TNM "receiver" points at areas of frequent human at noise-sensitive land uses. For single-family residences, that area could be the front or back yard, depending on orientation. Urban Systems, Inc. developed LOS D traffic volumes for I-10 and I-12 for year 2020 and Future Year 2040 for the Build and No-Build Alternatives including the hourly. The year 2020 traffic data was used to represent existing conditions.

Many noise receptors along the project are affected by structure-borne noise emanating from the underside of the I-10 bridge structures. TNM 2.5 does not predict structure-borne noise. To estimate the contribution of the structure-borne noise from the bridge decks, measurements were conducted at two sites near a bridge deck, at a series of distances back from the structure. That data was used to develop adjustments that were applied to the predicted traffic noise levels to account for the additional structure noise from the bridge deck. The

adjustments were applied to predicted noise levels for receivers within 150 feet of an I-10 bridge structure for both existing and future conditions. The adjustments for the new structures could be different than for the existing structures; however, those details are not currently available.

Table 3-4 summarizes the predicted noise levels and impacts for each NSA. The results are discussed in the following sections.

Existing Year 2020

Predicted exterior worst noise hour noise levels for the Existing Year 2020 case, including adjustments to add structure-borne noise, ranged from 40 to 79 dBA. The highest noise levels are predicted at the closest residences to I-10 with exposure to the structural bridge deck noise. The lower noise levels are predicted at the residences furthest from I-10 and I-12. Predicted noise levels for receptors within NSAs with an existing noise wall are generally lower than those for receivers within NSAs without an existing noise wall.

No-Build Year 2040

When a road is congested and over capacity during peak travel periods, the existing worst hour noise levels will occur during another time of day when traffic is traveling at or above the posted speed limit. I-10 and I-12 are congested roadways for many hours of the day. Although traffic on I-10 and I-12 will continue to grow without the project, the combination of traffic volume and speed that generates the worst hour noise levels will not. As a result, worst hour noise levels for No-Build Year 2040 will be the same as for existing conditions and the same receptors will be impacted.

Build Year 2040

Noise levels for the Build Year 2040 were determined by modeling the proposed I-10 geometry and traffic using TNM 2.5. Anticipated future posted speeds were used.

Five NSAs are protected by existing noise barriers. The project will not affect the existing noise barrier for NSA EB6. However, portions of the existing noise barriers for NSAs EB4, EB5, WB5 and WB7 will need to be relocated

TABLE 3-4
NOISE IMPACT SUMMARY

NSA	Description	Existing/No-Build 2040 Noise Levels (dBA)	No-Build 2040 Impacts	Build 2040 Noise Levels (dBA)	Build 2040 Noise Impacts				Existing Barrier?	Abatement Evaluation Needed?
					Substantial Increase		NAC			
					Impacts?	#	Impacts?	#		
EB1	South of I-10, between the Mississippi River and East Washington	55-76	144	57-76	No	0	Yes	130	No	Yes
EB2	South of I-10, between East Washington and Dalrymple	56-75	75	58-76	No	0	Yes	82	No	Yes
EB3a	South of I-10, between East Lakeshore Drive and Christian Street	61-79	30	61-79	No	0	Yes	29	No	Yes
EB3b	South of I-10, between Christian Street and South Acadian	58-79	50	57-78	No	0	Yes	48	No	Yes
EB4	South of I-10, between South Acadian and College	53-65	0	53-64	No	0	No	0[1]	Yes	No[1]
EB5	South of I-10, between College and the I-10/I-12 split	53-65	0	53-66	No	0	No	0	Yes	No
EB6	South of I-12, between the I-10/I-12 split and Essen Lane	52-61	0	52-61	No	0	No	0	Yes	No
WB1	North of I-10 and west of I-110, between the Mississippi River and Government Street	52-78	56	51-78	No	0	Yes	43	No	Yes
WB2	East of I-110 and I-10, between Government Street and East Washington	51-79	99	50-78	No	0	Yes	64	No	Yes
WB3	North of I-10 between East Washington and Dalrymple	62-76	36	62-76	No	0	Yes	35	No	Yes

NSA	Description	Existing/No-Build 2040 Noise Levels (dBA)	No-Build 2040 Impacts	Build 2040 Noise Levels (dBA)	Build 2040 Noise Impacts				Existing Barrier?	Abatement Evaluation Needed?
					Substantial Increase		NAC			
					Impacts?	#	Impacts?	#		
WB4a	North of I-10 between East Lakeshore Drive and Perkins	60-78	29	60-78	No	0	Yes	29	No	Yes
WB4b	North of I-10 between Perkins and South Acadian	58-75	61	58-74	No	0	Yes	36	No	Yes
WB5	North of I-10 between South Acadian and College	53-78	11	53-78	No	0	Yes	10[2]	Yes	Yes
WB6	North of I-10 between College and the I-10/I-12 split	54-67	0	55-69	No	0	No	0	Yes	No
WB7	North of I-12 between the I-10/I-12 split and Essen Lane	40-68	2	41-67	No	0	Yes	1	Yes	Yes
WB8	North of I-10 between LA 415 and 2179 Commercial Drive	57-62	0	57-62	No	0	No	0	No	No
Total			**593**					**508**		

NOTES:

1 – No impacts predicted using TNM 2.5, however, this NSA is conditionally designated as impacted because of potential parallel barrier effects.
2 – Impacts predicted using TNM 2.5. Additional conditional impacts possible because of potential parallel barrier effects.

to accommodate the widening. LA DOTD will relocate these barriers to a new location within the ROW and maintain the existing barrier height. The noise models for Build Year 2040 include the existing barrier for NSA EB6 and the relocated barriers for NSAs EB4, EB5, WB5 and WB7; therefore, the calculated noise levels include the noise reduction provided by the barriers.

The predicted noise levels for the Preferred Alternative ranged from 41 to 79 dBA. The highest noise levels are predicted at the closest receptors to I-10 with exposure to the structure-borne noise.

Differences between the predicted existing noise levels and the noise levels for the Preferred Alternative range from a decrease of 5 dB to an increase of 3 dB. Decreases in noise levels are typically due to additional shielding provided in areas where ramp or mainline profile elevations will change or where additional shielding of traffic will be provided by ramp structures. However, the predicted design year noise levels are approximately the same or slightly higher than the existing worst hour noise levels at most locations.

As shown in **Table 3-4**, the project is predicted to impact a total of 508 receptors (Activity Category B, C, D and E). No receptors are predicted to have a substantial increase of 10 dB over existing noise levels. LA DOTD has designated NSAs EB4 and WB5 as “conditionally impacted” because of the potential increase in noise levels behind the existing noise walls due to the parallel barrier effect.

The following sections summarize the predicted noise levels and impacts for each NSA. Appendix C of the Traffic Noise Analysis Technical Report includes tables of predicted results and figures showing the modeled receiver points, and noise impact designations.

NSA EB1

Predicted noise levels for NSA EB1 (on the south side of I-10 from the Mississippi River to East Washington) range from 57 to 76 dBA. The highest predicted noise levels are at the receptors closest to I-10 with exposure to structure-borne noise. The impacted properties in NSA EB1 include 128 Activity Category B residences and the Baranco-Clark YMCA playgrounds (Activity Category C).

NSA EB2

Predicted noise levels for NSA EB2 (on the south side of I-10 from East Washington to Dalrymple) range from 58 to 76 dBA. The impacted properties in NSA EB2 include 79 Activity Category B residences and three Activity Category C receptors (East Polk Street Park basketball court, baseball field and playground).

NSA EB3a

Predicted noise levels for NSA EB3a (on the south side of I-10 from East Lakeshore Drive to Christian St.) range from 61 to 79 dBA. The impacted properties in NSA EB3 include 29 Activity Category B residences.

NSA EB3b

Predicted noise levels for NSA EB3b (on the south side of I-10 from Christian St. to Acadian) range from 57 to 78 dBA. The highest predicted noise levels are for the first-row receptors closest to I-10 with exposure to structure-borne noise. The impacted properties in NSA EB3 include 48 Activity Category B residences and one Activity Category E receptor (Schlittz and Giggles patio).

NSA EB4

Predicted noise levels for NSA EB4 (on the south side of I-10 from Acadian to College) range from 53 to 64 dBA. NSA EB4 is protected by an existing noise barrier. Receptors in NSA EB4 (between Yazoo Street and Brownlee Street) are likely exposed to reflections of traffic noise between the two parallel, reflective noise barriers. Noise levels for receptors may be 2 to 4 dB higher than the TNM 2.5 predicted levels.

Although the TNM 2.5 predicted noise levels do not approach or exceed the NAC, LA DOTD has designated this NSA as “conditionally impacted” because of the parallel barrier effect.

NSA EB5

Predicted noise levels for NSA EB5 (on the south side of I-10 from College to the I-10/I-12 split) range from 53 to 66 dBA. NSA EB5 is protected by two existing noise barriers. Noise impacts are not predicted for NSA EB5.

NSA EB6

Predicted noise levels for NSA EB6 (on the south side of I-12 from the I-10/I-12 split to Essen) range from 52 to 61 dBA. NSA EB6 is protected by an existing noise barrier. Noise impacts are not predicted for NSA EB6.

NSA WB1

Predicted noise levels for NSA WB1 (on the north side of I-10 and West of I-110 from the Mississippi River to Government St.) range from 51 to 78 dBA. The highest noise levels are predicted at the closest receptors to I-10 with exposure to structure-borne noise. The impacted properties in NSA WB1 include 41 Activity Category B residences and two Activity Category C receptors (Odell Williams Museum of African American Art and the FLAIM Elementary Playground).

NSA WB2

Predicted noise levels for NSA WB2 (on the east side of I-110 and north side of I-10 from Government St. to East Washington) range from 50 to 78 dBA. The highest noise levels are predicted for the first-row receptors closest to I-10 with exposure to structure-borne noise. The impacted properties in NSA WB1 include 57 Activity Category B impacts residences and seven Activity Category C receptors (St. Francis Xavier Church courtyard, St. Francis Xavier Early Childhood Development Center playground, St. Francis Xavier Child Care Center playground, and the Expressway Park football field, basketball court, picnic shelter and playground).

NSA WB3

Predicted noise levels for NSA WB3 (on the north side of I-10 from East Washington to Dalrymple) range from 62 to 76 dBA. The impacted properties in NSA WB3 include 35 Activity Category B impacts residences.

NSA WB4a

Predicted noise levels for NSA WB4a (on the north side of I-10 from East Lakeshore Drive to Perkins) range from 60 to 78 dBA. The highest predicted noise levels are for the first-row receptors closest to I-10 with exposure to structure-borne noise. The impacted properties in NSA

WB4a include 28 Activity Category B residences and the patio at Duvic's (Activity Category E).

NSA WB4b

Predicted noise levels for NSA WB4b (on the north side of I-10 from Perkins to Acadian) range from 58 to 74 dBA. The highest noise levels are predicted at the receptors closest to I-10 with exposure to structure-borne noise. The impacted properties in NSA WB4b include 35 Activity Category B residences and the City Pork patio (Activity Category E).

NSA WB5

Predicted noise levels for NSA WB5 (on the north side of I-10 from Acadian to College) range from 53 to 78 dBA. NSA WB5 is protected by an existing noise barrier. The impacted properties in NSA WB5 include ten Activity Category B residences.

NSA WB6

Predicted noise levels for NSA WB6 (on the north side of I-10 from College to the I-10/I-12 split) range from 55 to 69 dBA. No impacts are predicted in NSA WB6.

NSA WB7

Predicted noise levels for NSA WB7 (on the north side of I-10 and I-12 from the I-10/I-12 split to Essen) range from 41 to 67 dBA. NSA WB7 is protected by three existing noise barriers. The impacted properties in NSA WB7 include one Activity Category B residence.

NSA WB8

Predicted noise levels for NSA WB8 (on the north side of I-10 from the LA415 to LA1) range from 57 to 62 dBA. No impacts are predicted in NSA WB8.

3.7.2.2 Noise Abatement Evaluation

In accordance with criteria in the LA DOTD noise policy, noise abatement must be evaluated for "feasibility" and, if feasible, for "reasonableness." Noise barriers must be both feasible and reasonable to be deemed "likely" for construction.

As discussed, five NSAs have existing noise barriers (EB4, EB5, EB6, WB5 and WB7). The project will not affect the existing noise barrier for NSA EB6. However, portions of the existing noise barriers for NSAs EB4, EB5, WB5 and WB7 will need to be relocated to accommodate the widening. These five barriers (existing or relocated) were evaluated using FHWA's guidance document "*Consideration of Existing Noise Barrier in a Type I Noise Analysis.*"

Feasibility includes acoustical and engineering considerations. Acoustical feasibility means that a noise barrier will provide at least a 5dB reduction in the noise level for at least 75% of the first-row, impacted receptors. Additionally, the noise barrier should be feasible from an engineering perspective.

If feasible, then the barriers are assessed for reasonableness in accordance with the criteria in the LA DOTD noise policy. Noise abatement must meet the following three criteria to be considered reasonable. If any of the criteria is not met, the noise abatement measure will not be constructed.

1. Noise Reduction Design Goal: At a minimum, at least one receptor must receive an 8dB reduction for the noise abatement system to be reasonable.
2. Cost-Effectiveness: If the estimated cost of constructing a noise barrier (including installation and additional necessary construction such as foundations or guardrails) divided by the number of benefited receptors (those who would receive a reduction of at least 5dB) is $35,000 or less per benefited receptor, a barrier is considered to be cost-effective.
3. Consideration of Viewpoints: The viewpoints of the affected property owners and residents are important. For those barriers found to be reasonable by the Cost-Effectiveness and Design Goal criteria above, viewpoints of the benefited receptors and affected property owners will be sought.

Noise barriers were determined to be the only available potential abatement measure to reduce noise levels for impacted receptors for this project.

Noise Study Areas without Existing Noise Barriers

Nine NSAs without existing noise barriers were identified as having impacted land uses and were evaluated for noise barriers. The investigated noise barriers for four NSAs (EB2, EB3a, WB3 and WB4a) are feasible according to the LA DOTD noise policy. Noise barriers for NSAs EB1, EB3b, WB1, WB2, and WB4b do not meet the feasibility criteria due to structure-borne noise; therefore, they do not qualify for federal funding.

The barrier designs for the NSAs EB2, EB3a, WB3 and WB4a were then evaluated for reasonableness as summarized in **Table 3-5**. As shown, all four barrier designs meet the Noise Reduction Design Goal and meet LA DOTD's cost-effectiveness criteria of $35,000 cost per benefited residence and therefore, qualify for federal funding

Noise Study Areas with Existing Noise Barriers

The five NSAs with existing noise barriers were evaluated in accordance with FHWA's guidance. **Table 3-6** summarizes the results of the existing noise barrier evaluations. As indicated, none of the receptors in NSAs EB5, EB6 and WB6 are predicted to be impacted. Therefore, no further evaluation is needed.

Ten residences in WB5 (Acadian to College) and one residence in WB7 (I-10/I-12 split to Essen) are predicted to be impacted. Additionally, LA DOTD identified NSA EB4 (Acadian to College) as conditionally impacted due to parallel barrier effects.

TABLE 3-5
REASONABLENESS EVALUATION FOR NSAS WITHOUT EXISTING NOISE BARRIERS

Noise Study Area	Description	Meets Noise Reduction Design Goal?	Barrier Area (sf)	Barrier Length (ft)	Avg Height (ft)	Barrier Cost	Benefits	Cost Per Benefited Residence	Reasonable?
EB2	South of I-10, from Fig Street to East Lakeshore Drive	Yes	50,446	3,680	14	$1,614,272	146	$11,057	Yes
EB3a	South of I-10, from East Lakeshore Drive to west of Perkins	Yes	33,852	2,418	14	$1,184,820	43	$27,553	Yes
WB3	North of I-10 from Dalrymple to East Washington	Yes	35,120	2,621	13	$1,194,080	49	$24,368	Yes
WB4a	North of I-10 from west of Christian Street to East Lakeshore Drive	Yes	25,214	1,985	13	$907,704	26	$34,911	Yes

TABLE 3-6
EVALUATION FOR NSAS WITH EXISTING NOISE BARRIERS

NSA	Name	Existing Abatement	Impacts?	Feasible?	Meets Noise Reduction Design Goal?	Action?	Abatement Conclusion
EB4	Eastbound: South Acadian to College	Barrier (portions to be relocated at same height)	No (considered conditionally impacted due to parallel barrier effect)	Yes	Yes	No Action	No changes to existing noise barrier
EB5	Eastbound: College to I-10/I-12 split	Barrier (portions to be relocated at same height)	No	No analysis needed	-	-	No changes to existing noise barrier
EB6	Eastbound: I-10/I-12 split to Essen Lane	Barrier (no relocation necessary)	No	No analysis needed	-	-	No changes to existing noise barrier.
WB5	Westbound: South Acadian to College	Barrier (portions to be relocated at same height)	Yes – 10 residences	No	Yes	Evaluate Barrier Modifications	No changes to existing noise barrier. Feasibility not possible because of structure noise for Aldrich Drive and Barber Street receptors
WB7	Westbound: I-10/I-12 split to Essen Lane	Barrier (portions to be relocated at same height)	1 residence	Yes	Yes	No Action	No changes to existing noise barrier

The existing noise barriers for EB4 and WB7 meet LA DOTD's feasibility criteria and Noise Reduction Design Goal. Therefore, no additional noise barrier evaluation is required for NSAs EB4 and WB7.

Ten residences are predicted to be impacted in NSA WB5 with the existing noise barrier. The existing barrier does not meet the LA DOTD's feasibility criteria due to structure-borne noise from the bridge near College. The evaluation concluded that, even with barrier modifications, the feasibility criteria still cannot be achieved. Therefore, a modified barrier does not qualify for federal funds.

3.7.3 Statement of Likelihood

Table 3-7 summarizes the noise barriers that are likely to be constructed with federal funds as part of the project for NSAs EB2, EB3a, WB3 and WB4a. The final decision on the implementation of noise barriers will be made by LA DOTD during project design. If during final design, conditions substantially change that impact the implementation of likely barriers, LA DOTD will solicit the viewpoints of the benefited residents and property owners as part of the reevaluation of reasonableness. Only barriers determined to be both feasible and reasonable will be constructed with federal funds. Other desired barriers will have to be funded through a special state appropriation.

LA DOTD will also be relocating parts of the existing noise barriers for NSAs EB4, EB5, WB5 and WB7 to accommodate the widening.

As noted, noise barriers did not qualify for federal funding for all the highway miles in the project area. There were areas that did exhibit a noise benefit for some receptors, but the benefit was not enough to warrant a federally funded noise barrier under LA DOTD Noise Policy. For these areas, if the public is in support of pursing funding for noise barriers, LA DOTD will seek special state appropriation(s) to fund construction of non-warranted barriers. While there is no guarantee an appropriation will be granted, this is the path to secure funding to construct noise barriers in areas where they do not qualify for federal funds.

Figures 5a-5s, located at the end of this chapter, show the locations of likely noise barriers, existing noise barriers, existing noise barriers to be relocated, and noise barriers that would require special state appropriation to construct in relation to the project and required ROW. Additional figures are in the Noise Analysis in **Appendix E**.

TABLE 3-7
NOISE BARRIERS QUALIFYING FOR FEDERAL FUNDING

Noise Study Area	Likely Barrier Location (begin & end points)	Length (ft)	Average Barrier Height (ft)	Estimated Cost
EB2	South of I-10, from Fig Street to East Lakeshore Drive	3,680	14	$1,614,272
EB3a	South of I-10, from East Lakeshore Drive to west of Perkins	2,418	14	$1,184,820
WB3	North of I-10 from Dalrymple to East Washington	2,621	13	$1,194,080
WB4a	North of I-10 from west of Christian Street to East Lakeshore Drive	1,985	13	$907,704

Note: These barriers represent those likely to receive federal funding.

3.7.4 Information for Local Officials

LA DOTD encourages local communities and developers to practice noise compatibility planning to avoid future noise impacts. Guidance documents on noise compatible land use planning are available from FHWA.

Table 3-8 presents future predicted noise levels for areas along I-10 and I-12 within the project limits where vacant and possibly developable lands exist. The results indicate that exterior areas of Activity Category B and C uses would be impacted within a distance of approximately 380 feet from edge of pavement of the nearest travel lane of I-10. This information is being included to make local officials and planners aware of anticipated highway noise levels so that future development will be compatible with these levels.

TABLE 3-8
DESIGN YEAR 2040 PREDICTED NOISE LEVELS FOR UNDEVELOPED AREAS

Distance*	L_{Aeq} (h), dBA
100 feet	74.6
200 feet	70.3
300 feet	67.2
400 feet	65.2
500 feet	63.5
600 feet	61.7

* Perpendicular distance to the centerline of the nearest travel lane of I-10.

FIGURE 5a
POTENTIAL NOISE BARRIER LOCATIONS

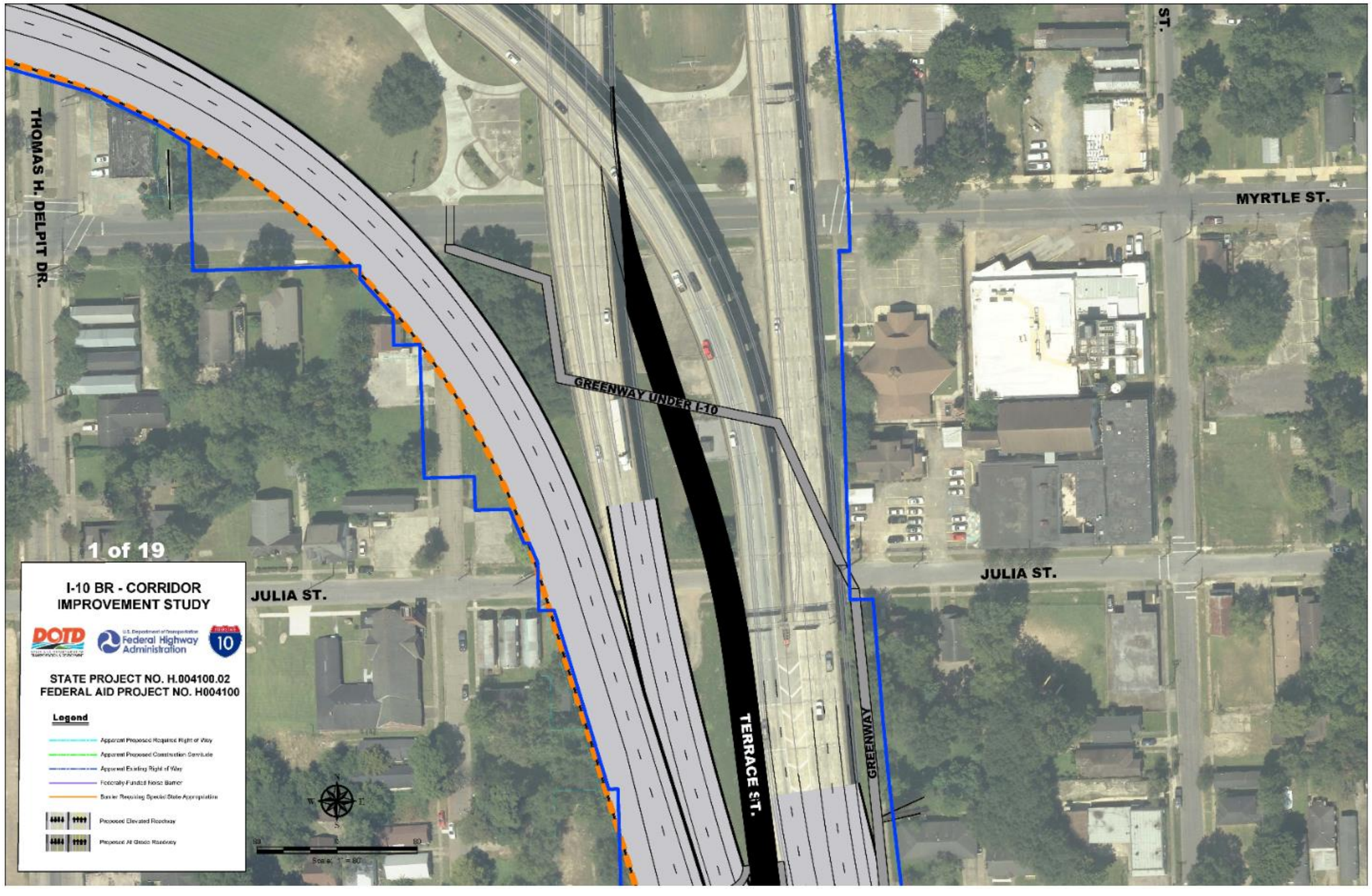


FIGURE 5b
POTENTIAL NOISE BARRIER LOCATIONS

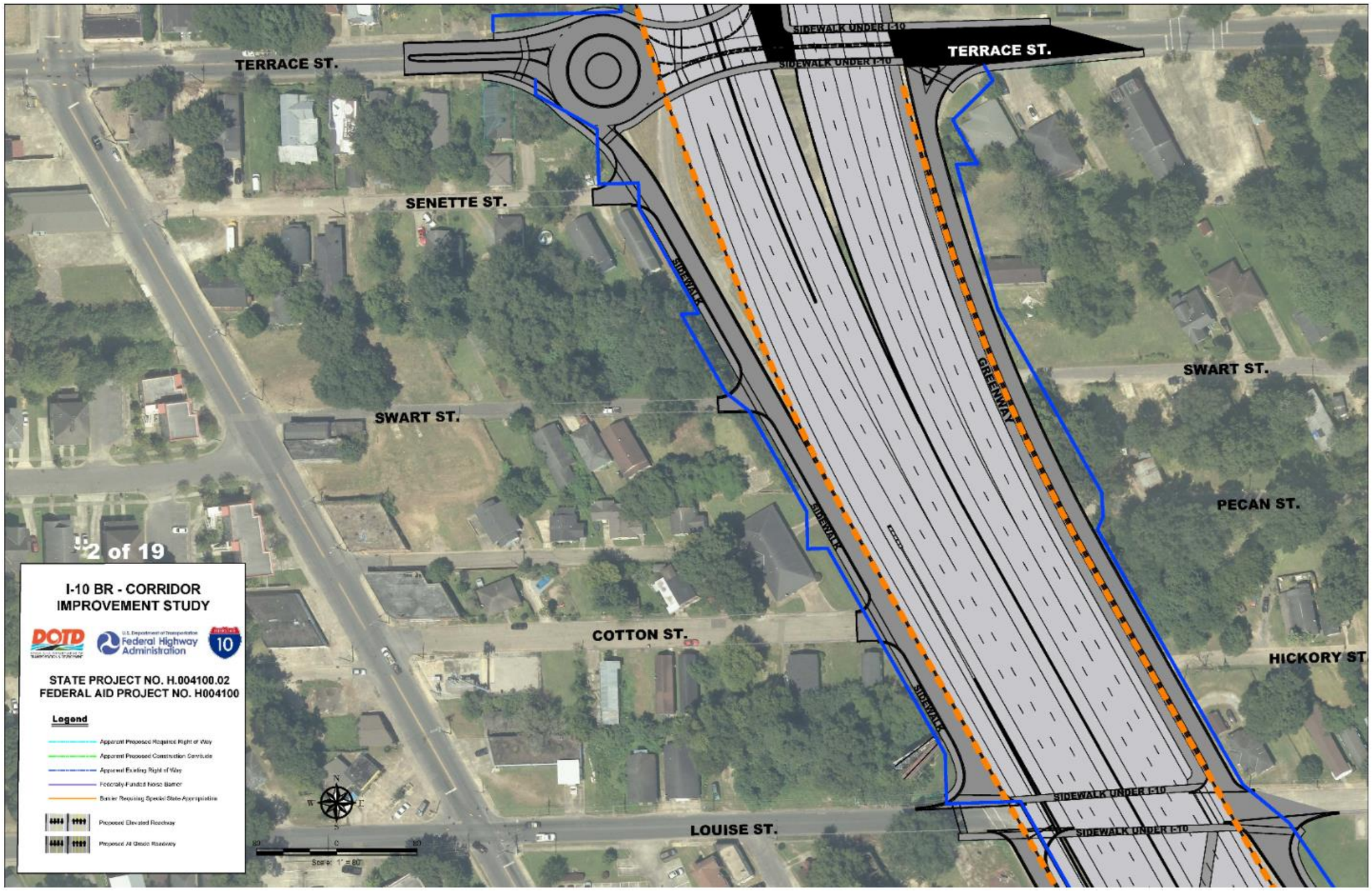


FIGURE 5c
POTENTIAL NOISE BARRIER LOCATIONS

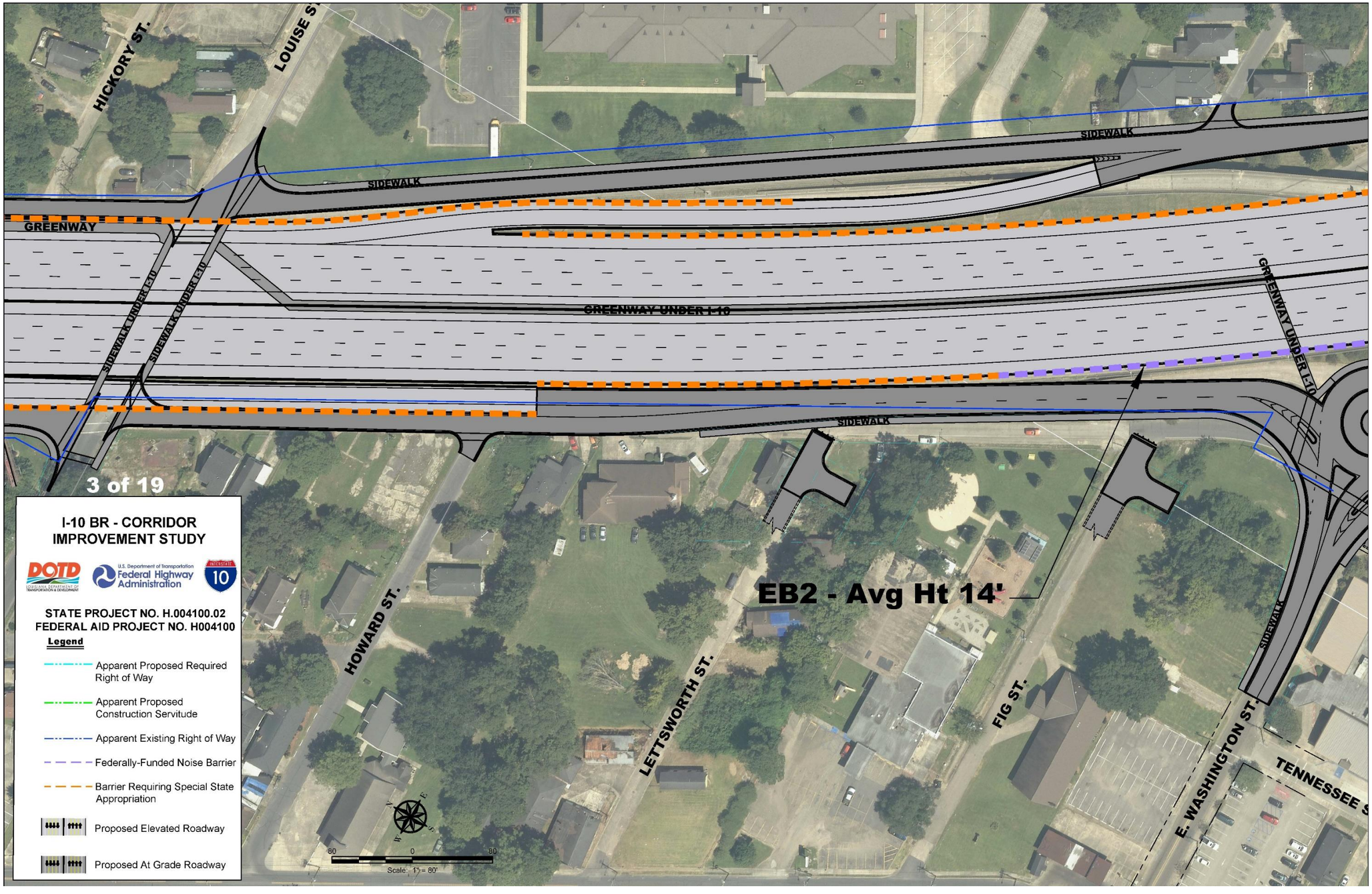


FIGURE 5d
POTENTIAL NOISE BARRIER LOCATIONS

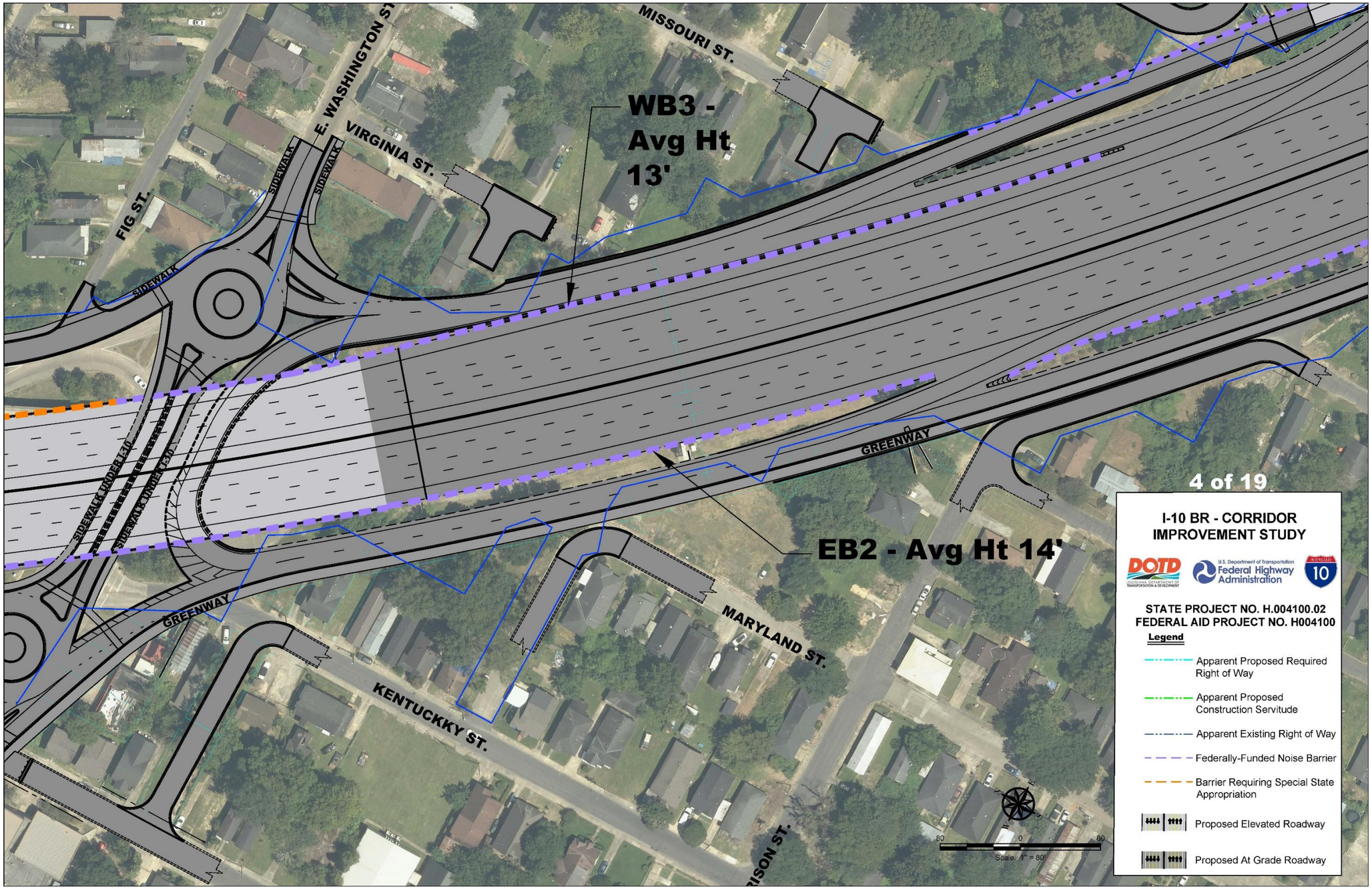


FIGURE 5e
POTENTIAL NOISE BARRIER LOCATIONS

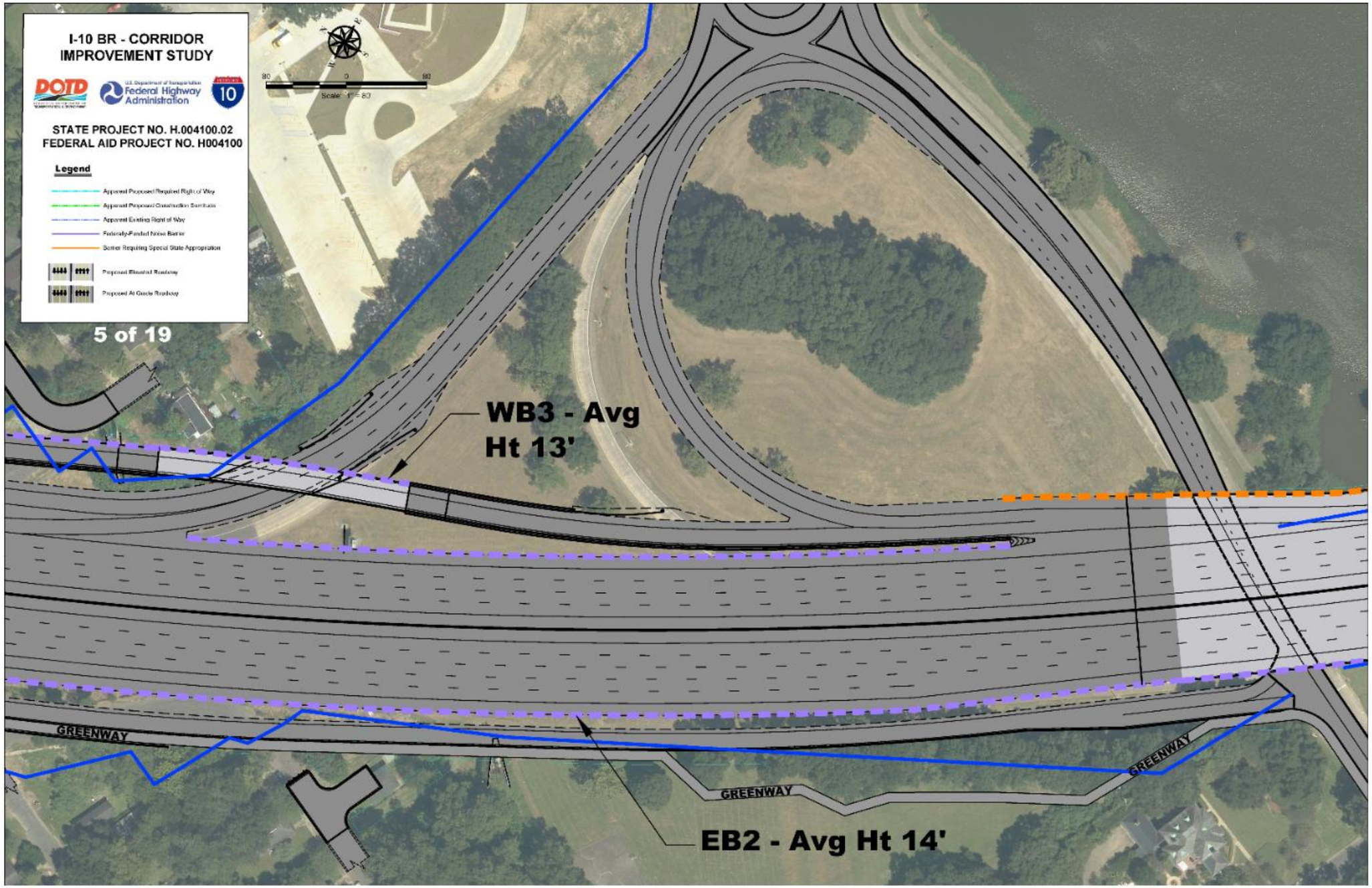


FIGURE 5f
POTENTIAL NOISE BARRIER LOCATIONS

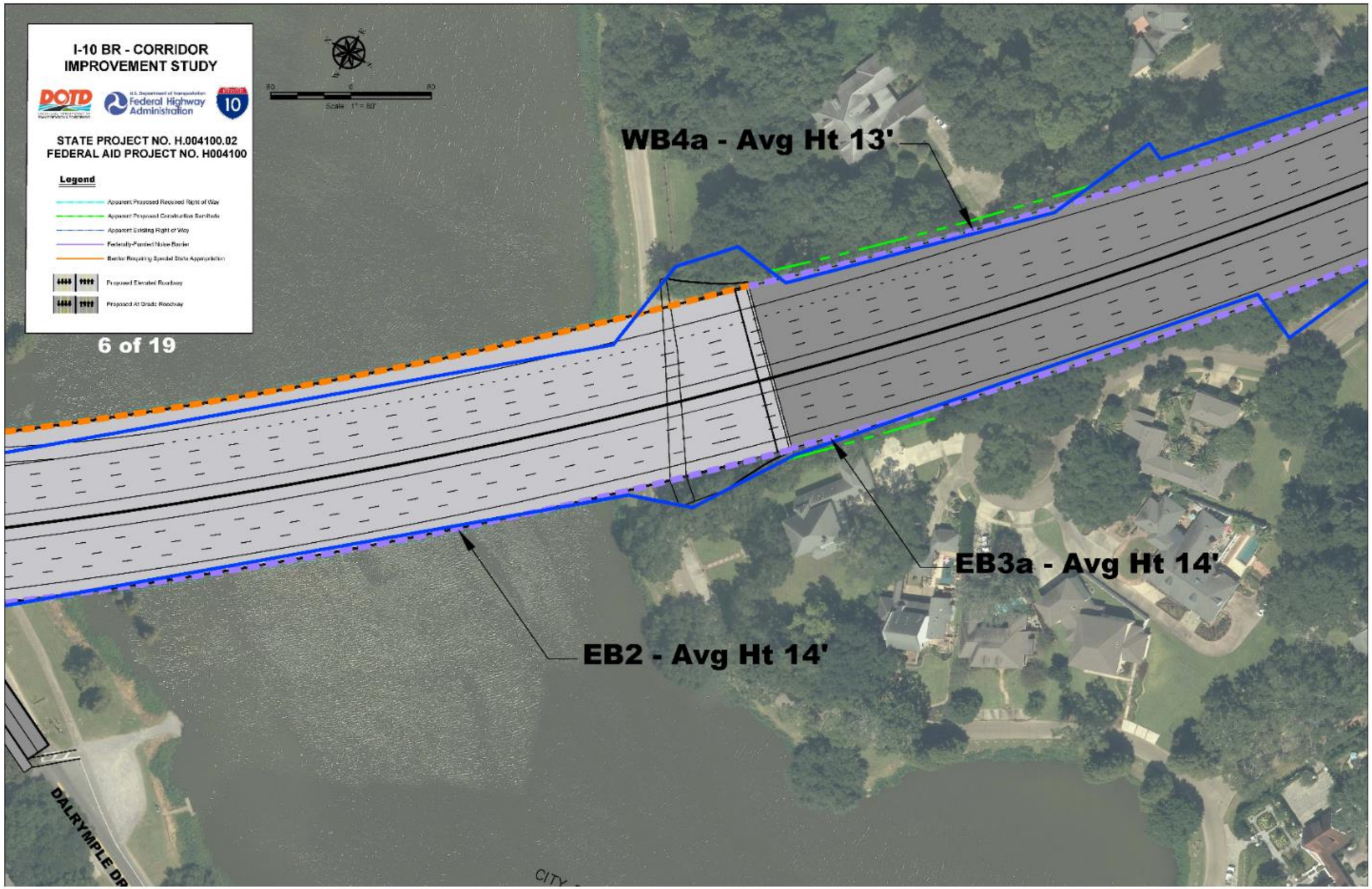


FIGURE 5g
POTENTIAL NOISE BARRIER LOCATIONS

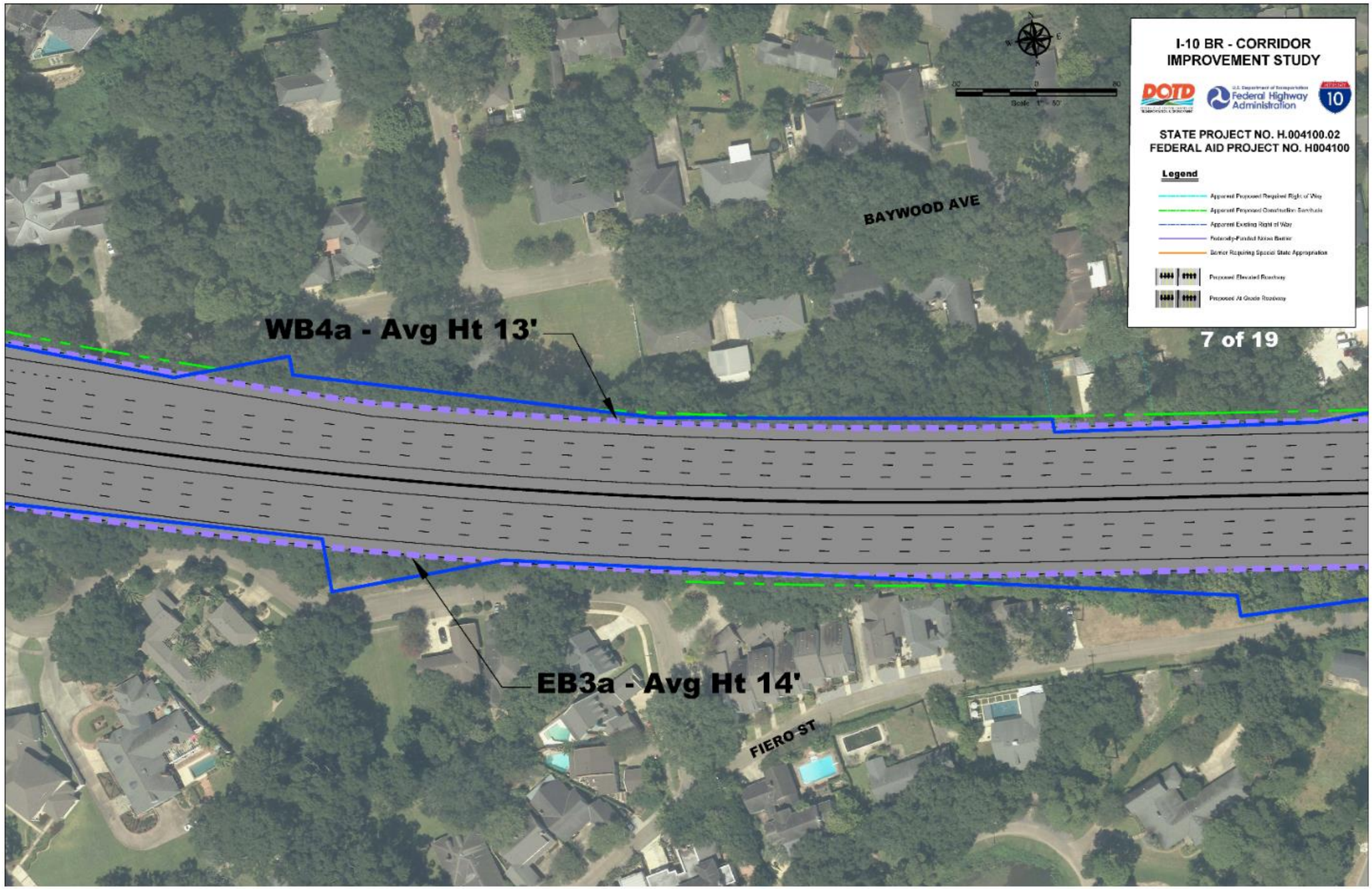


FIGURE 5h
POTENTIAL NOISE BARRIER LOCATIONS

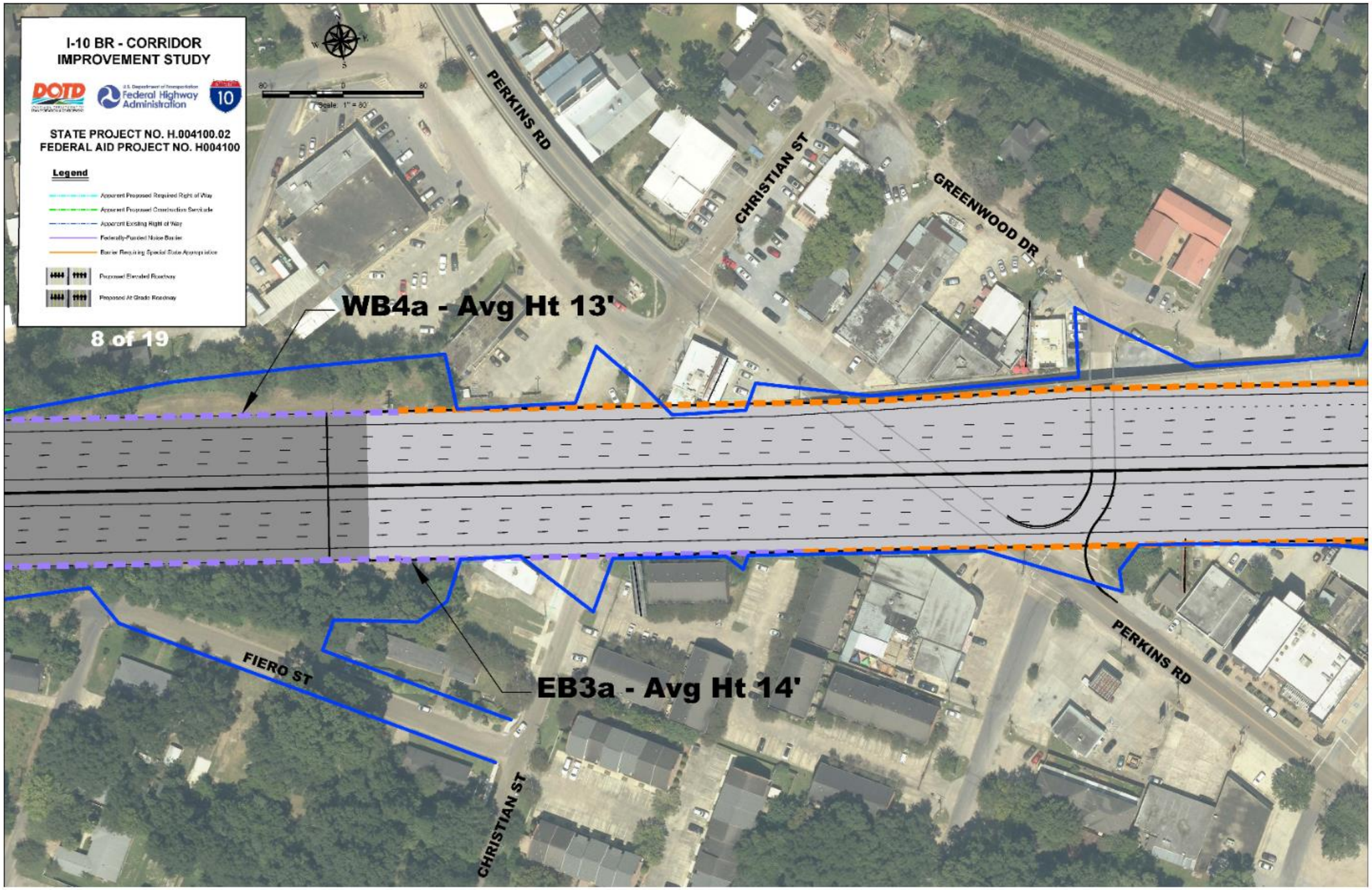


FIGURE 5i
POTENTIAL NOISE BARRIER LOCATIONS

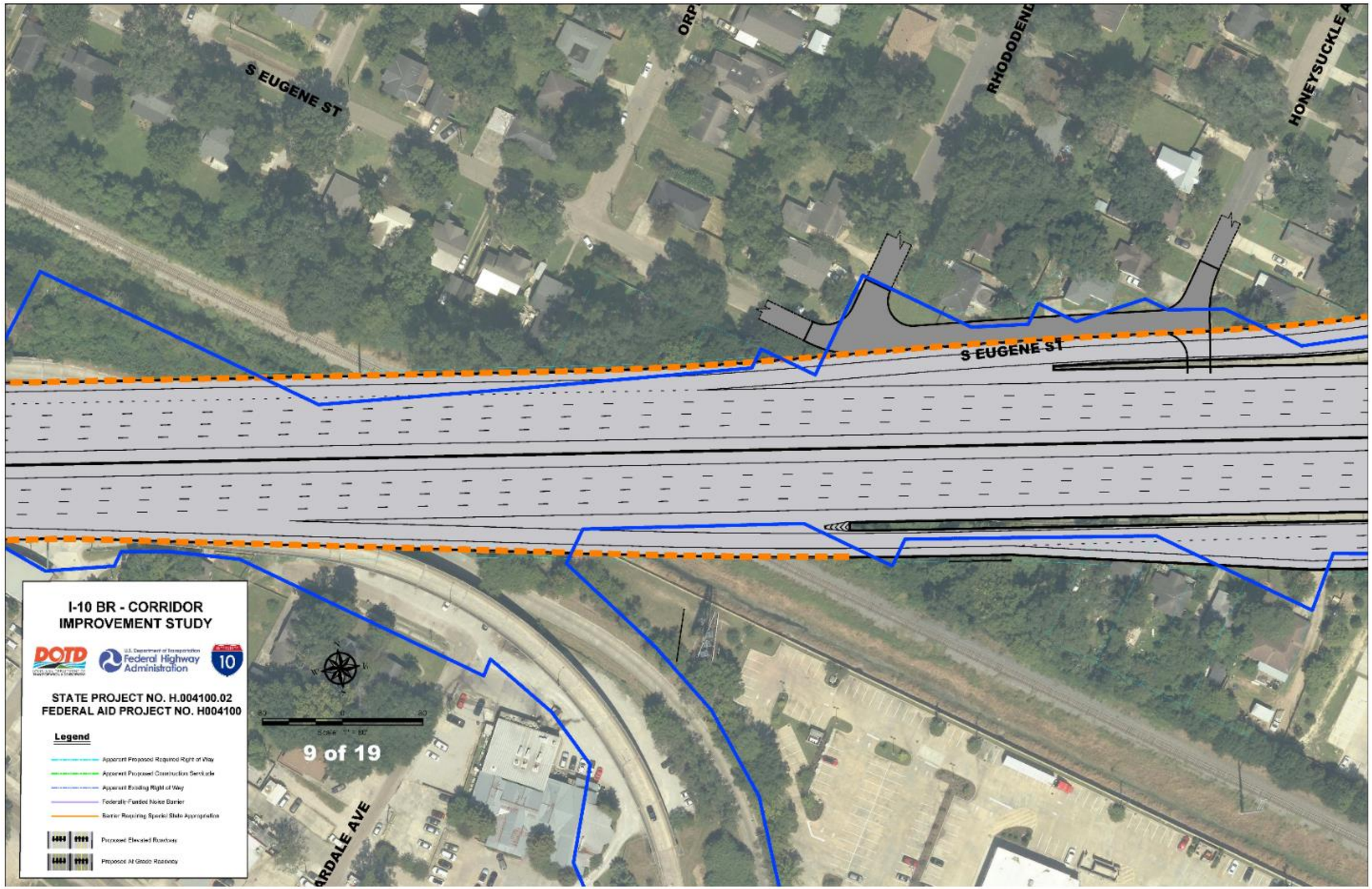


FIGURE 5j
POTENTIAL NOISE BARRIER LOCATIONS

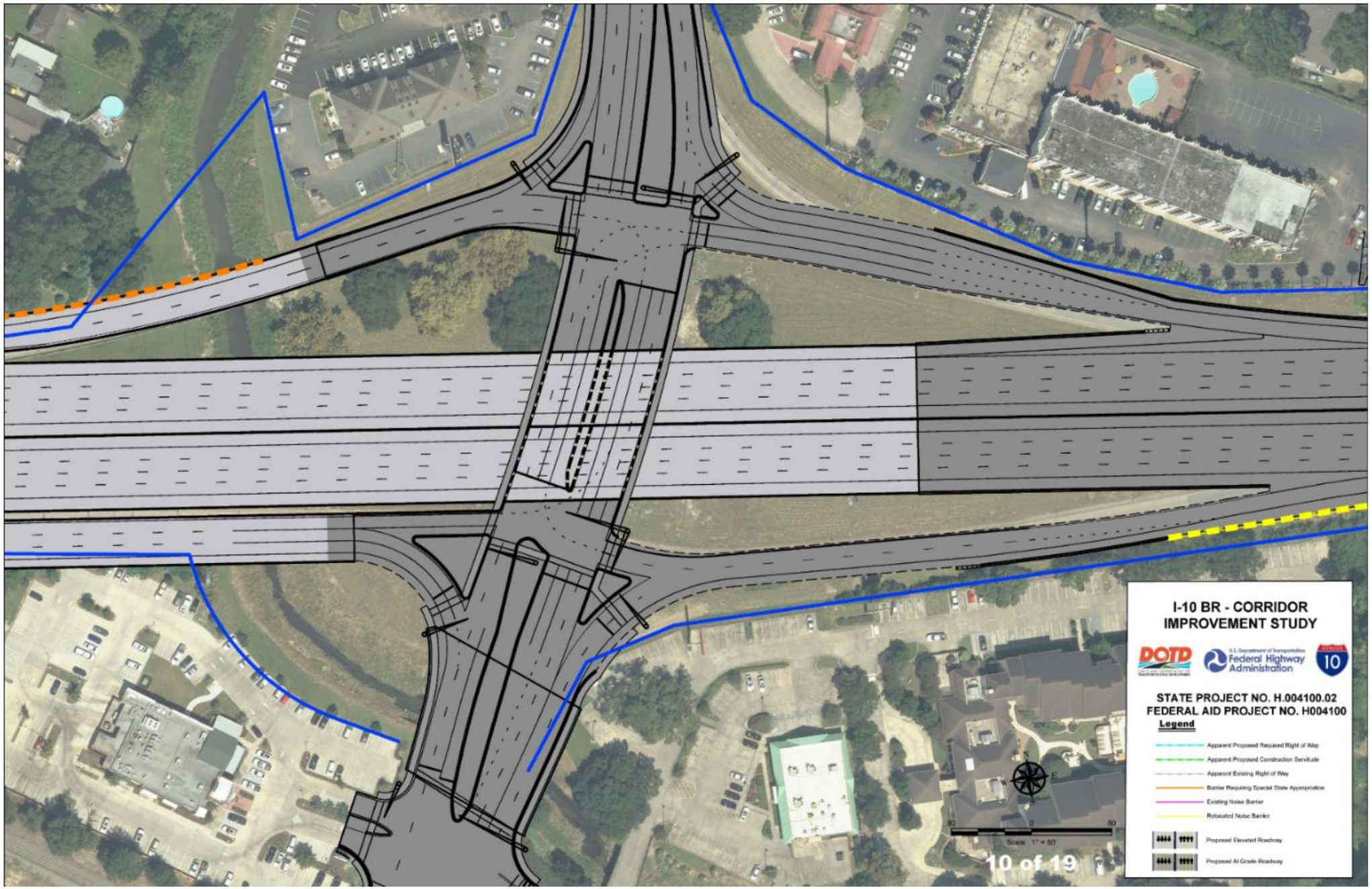


FIGURE 5k
POTENTIAL NOISE BARRIER LOCATIONS

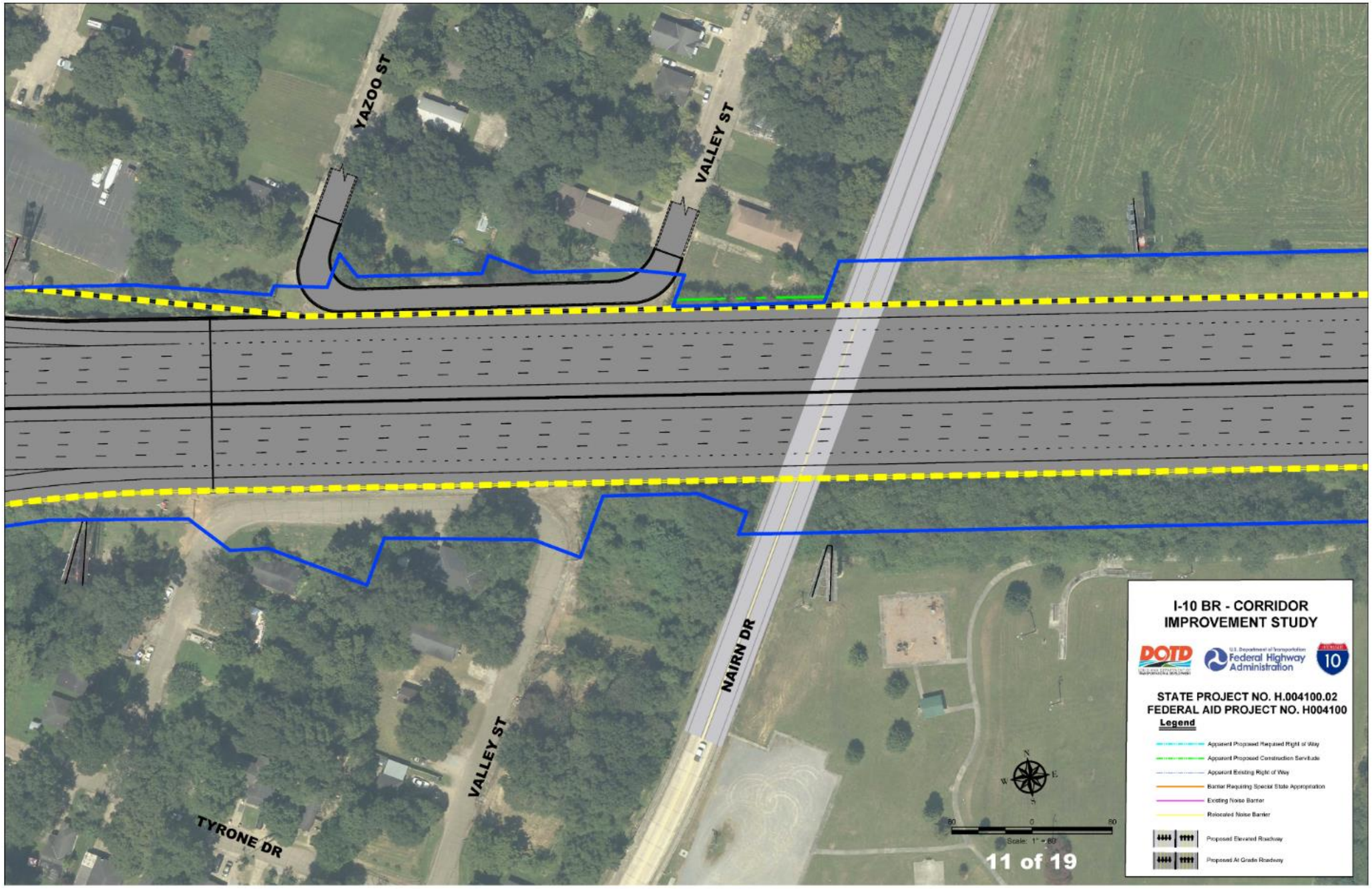


FIGURE 5I
POTENTIAL NOISE BARRIER LOCATIONS

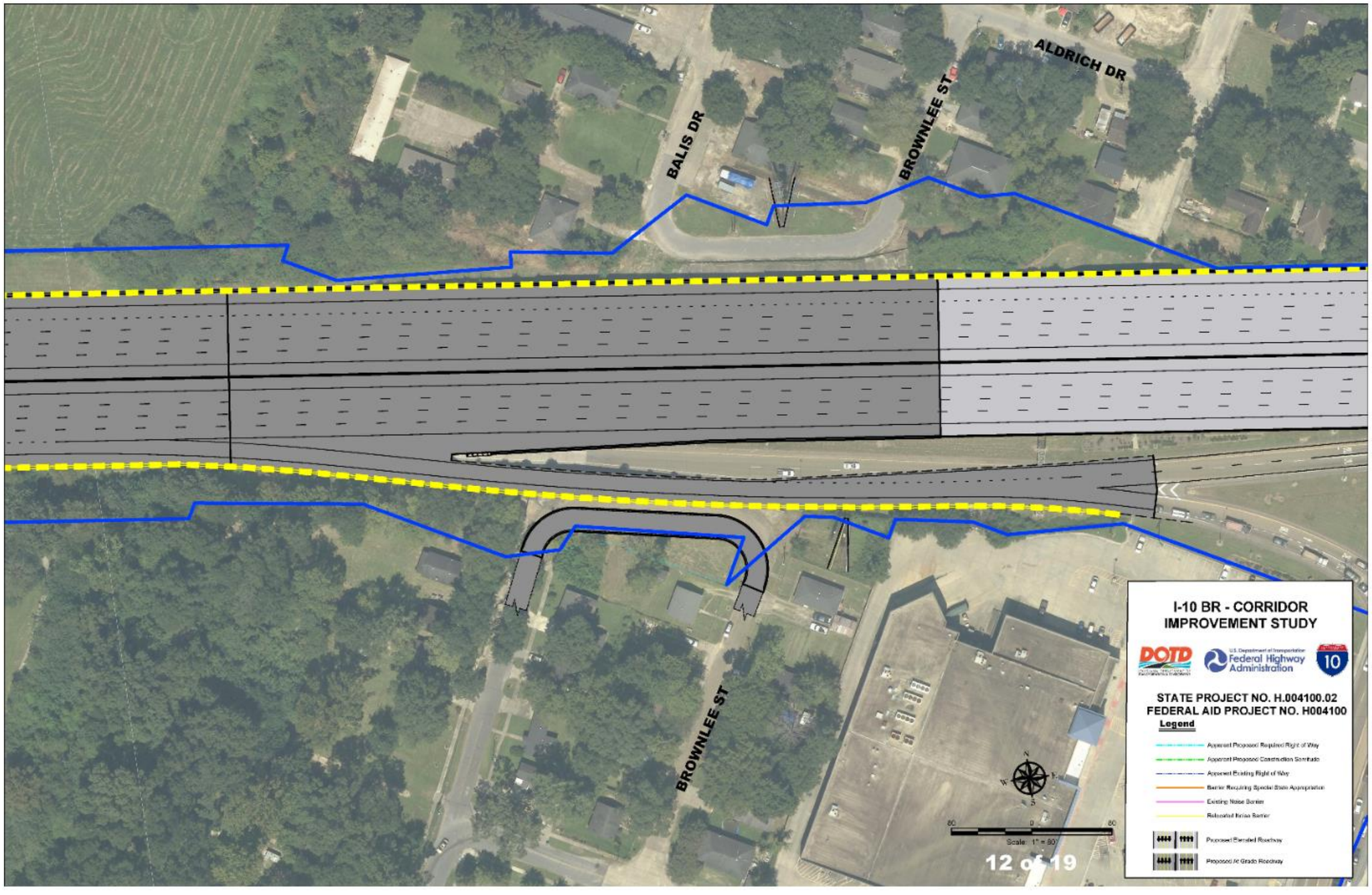


FIGURE 5m
POTENTIAL NOISE BARRIER LOCATIONS

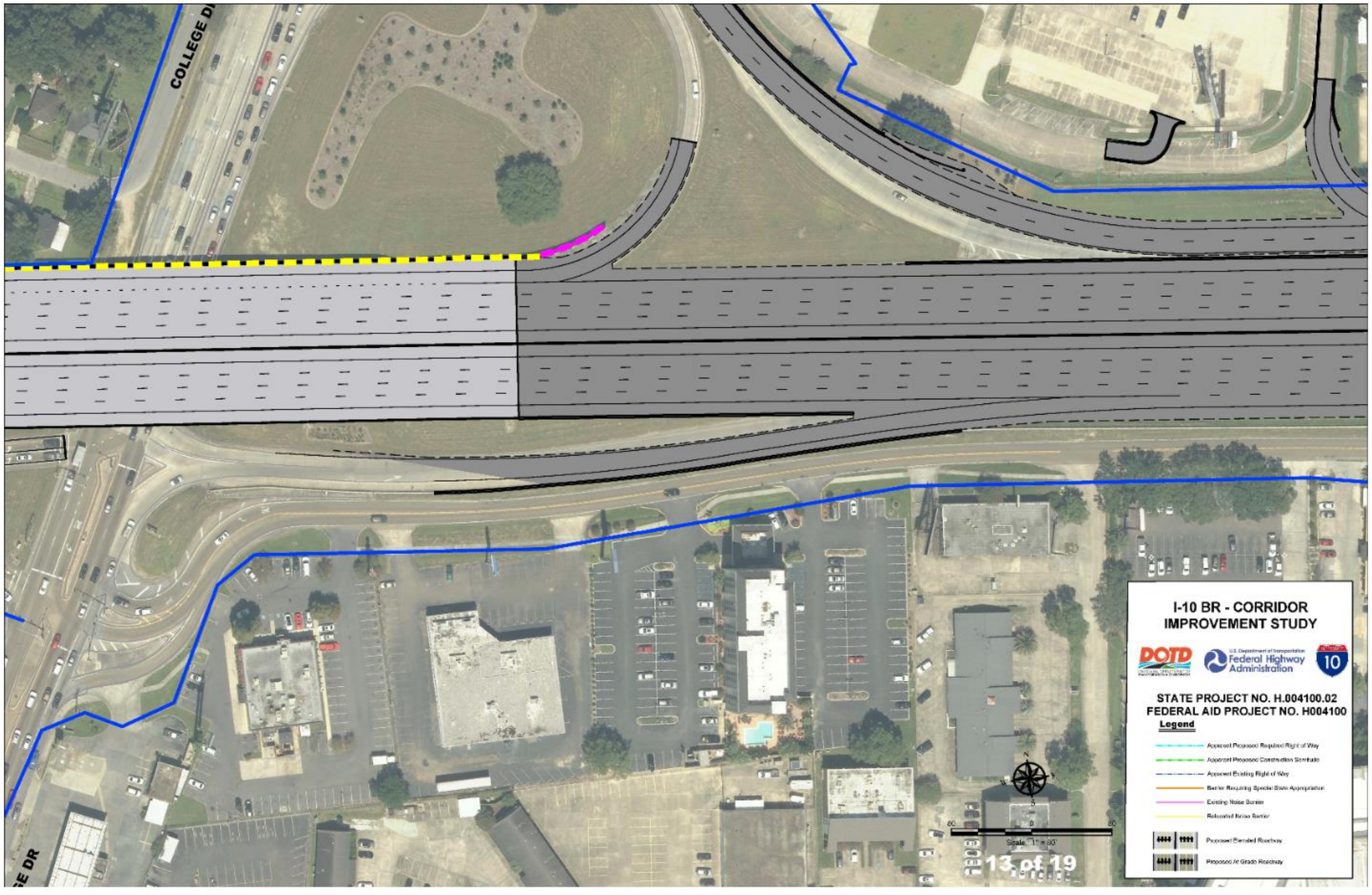


FIGURE 5n
POTENTIAL NOISE BARRIER LOCATIONS

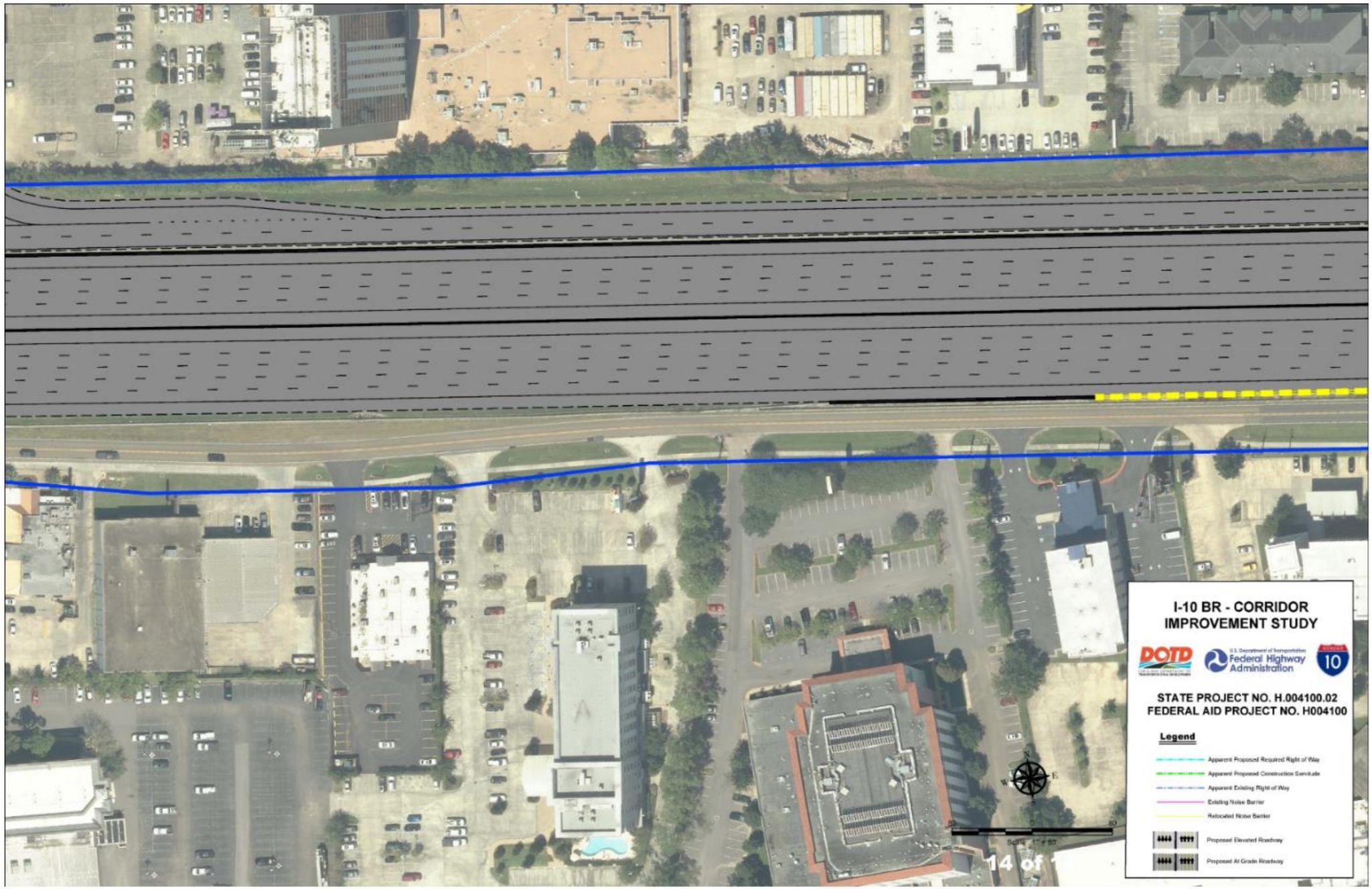


FIGURE 5o
POTENTIAL NOISE BARRIER LOCATIONS

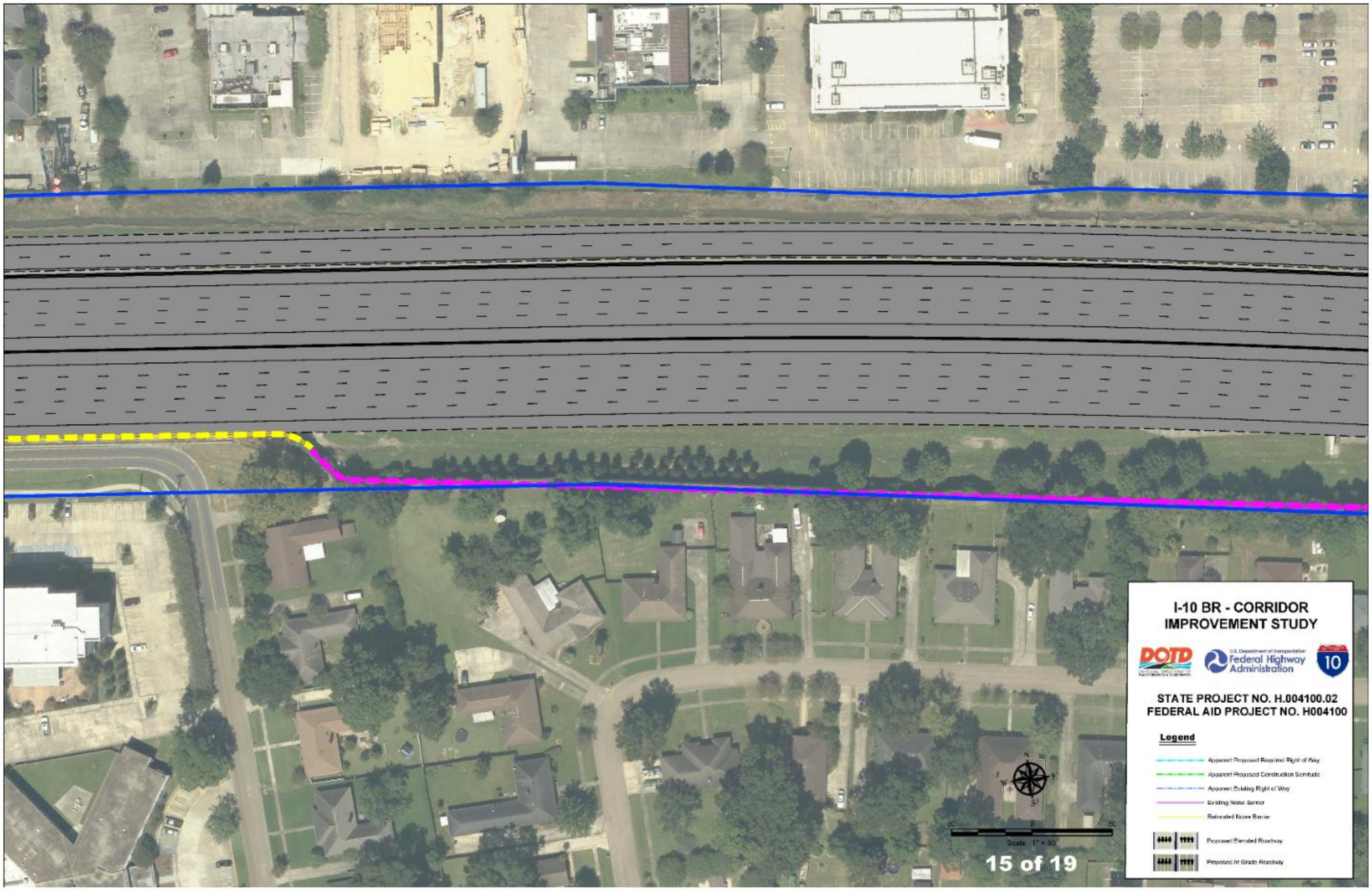


FIGURE 5p
POTENTIAL NOISE BARRIER LOCATIONS

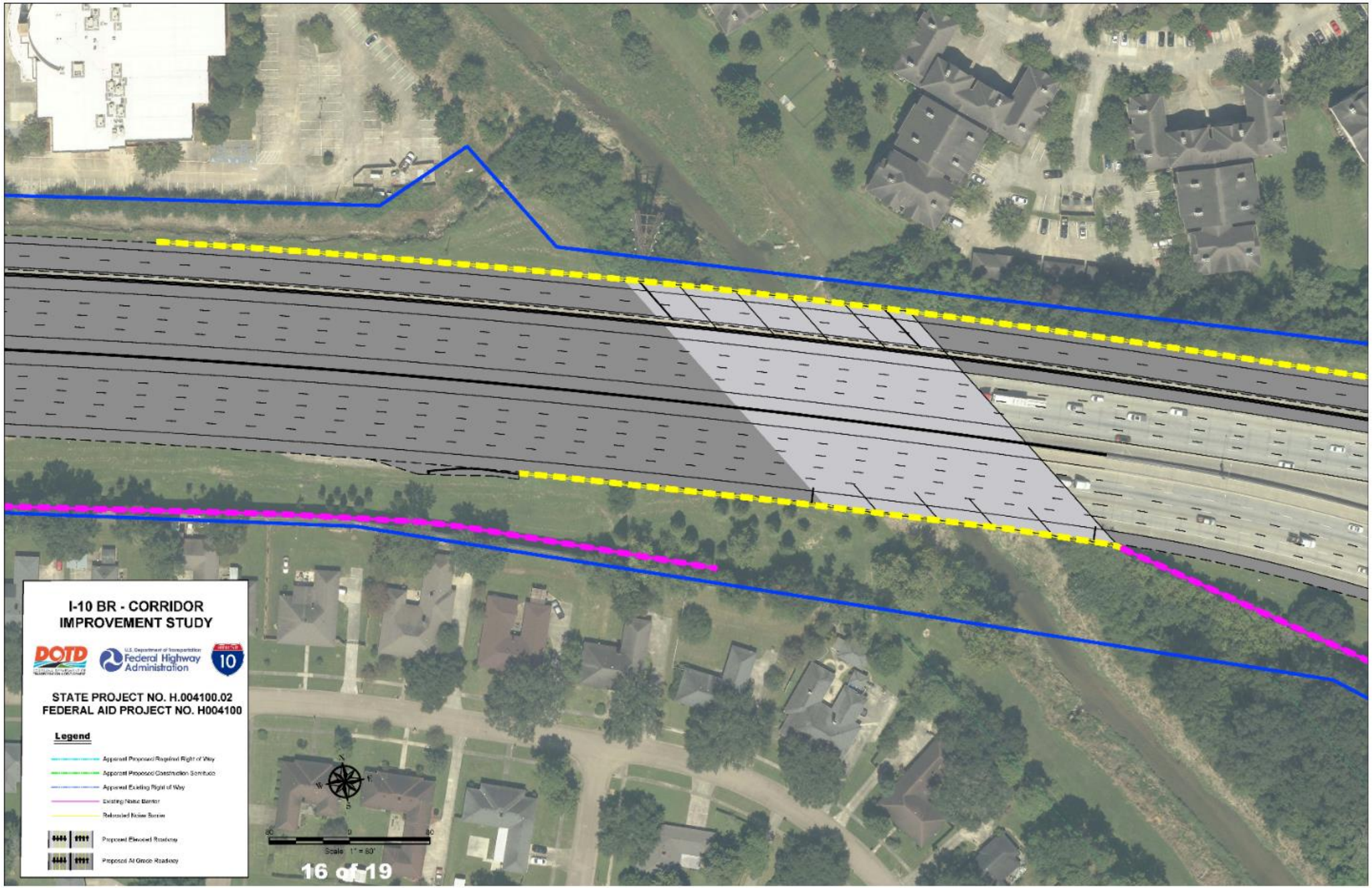


FIGURE 5q
POTENTIAL NOISE BARRIER LOCATIONS

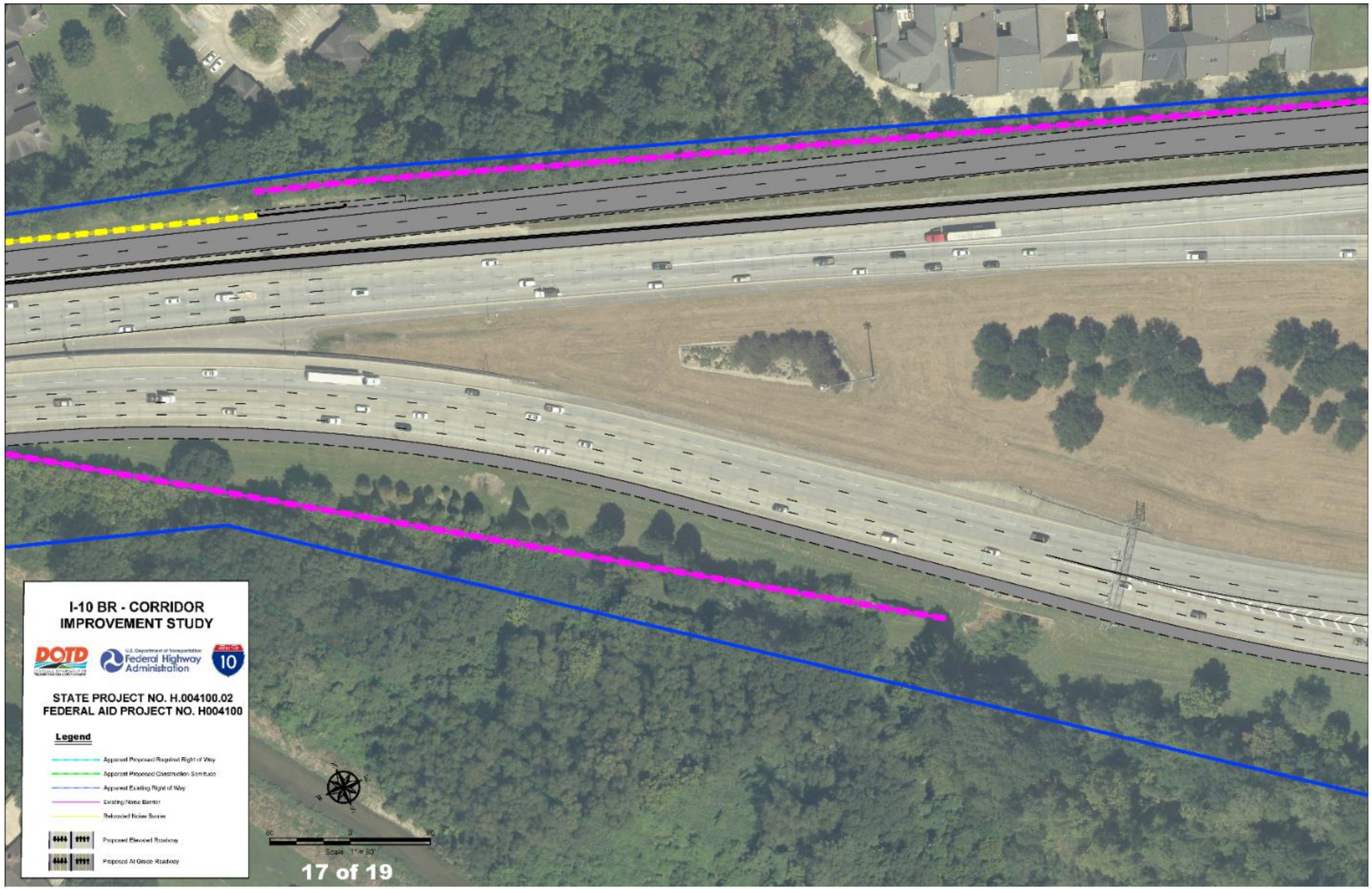


FIGURE 5r
POTENTIAL NOISE BARRIER LOCATIONS

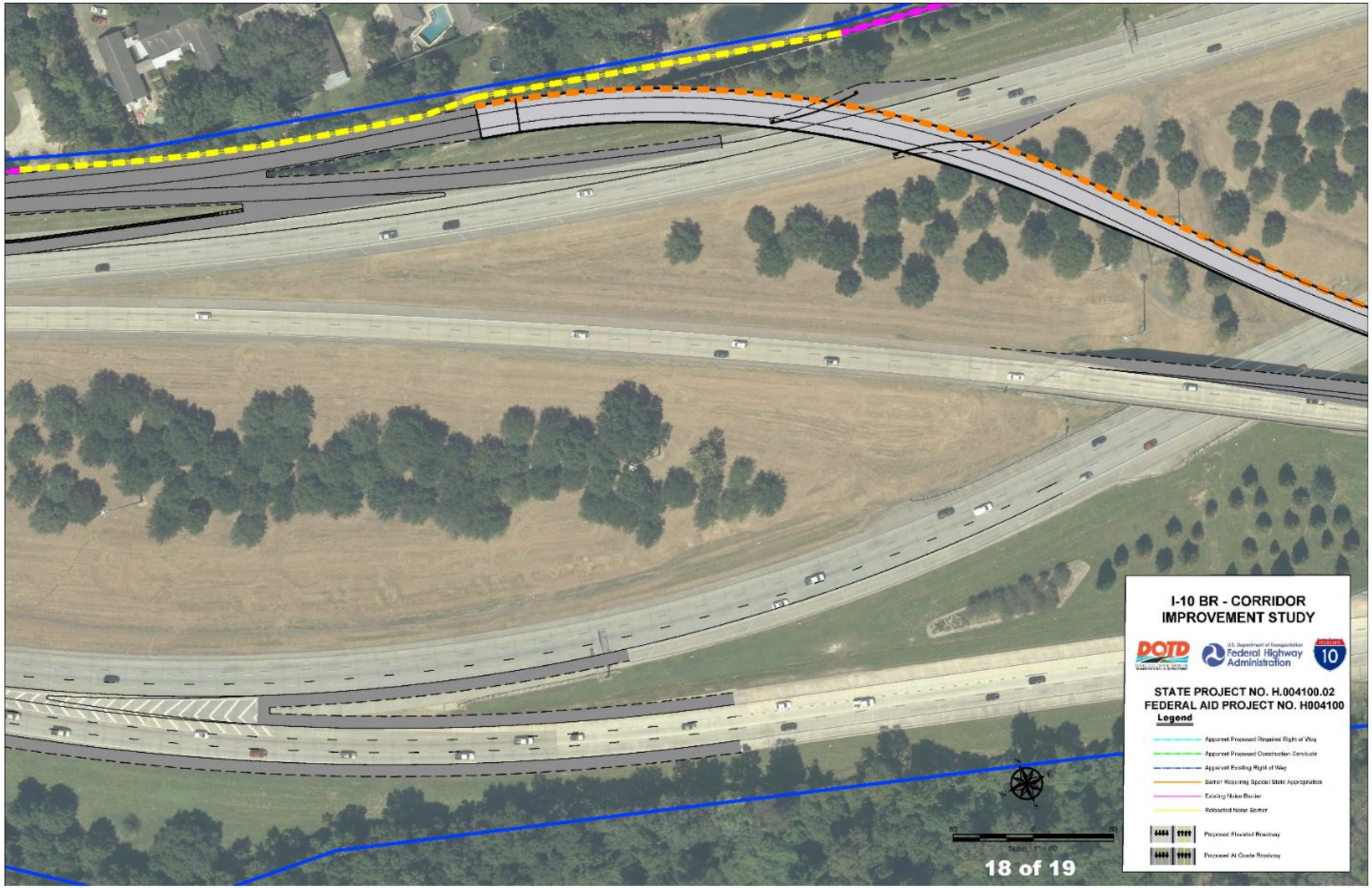


FIGURE 5s
POTENTIAL NOISE BARRIER LOCATIONS

3.8 Air Quality

3.8.1 Existing Environment

The air quality study area for the project is in East and West Baton Rouge Parishes, Louisiana. Air quality is measured by the type and level of pollutants in the air. Many sources generate pollutants that affect air quality, including stationary sources such as electric utilities and factories, and mobile sources such as vehicles on highways.

USEPA has established allowable concentrations and exposure limits called the National Ambient Air Quality Standards (NAAQS) for various "criteria" pollutants. These pollutants include carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), sulfur oxides (SO_x), and lead (Pb).

The USEPA identifies areas that do not meet the NAAQS for the criteria pollutants and designates them as "nonattainment" areas in accordance with the Clean Air Act Amendments of 1990 (CAAA of 1990). When a nonattainment area meets the NAAQS, the USEPA redesignates it as a "maintenance" area." East and West Baton Rouge Parishes are in the Baton Rouge maintenance area for the 2008 ozone NAAQS but are in attainment for all other criteria pollutants. According to USEPA, concentrations of all criteria pollutants have dropped substantially since 1990 despite economic growth and increased travel and energy use.

In addition to the six "criteria" pollutants, USEPA regulates 188 air toxic pollutants, also known as hazardous air pollutants (HAP), as mandated by the CAAA. USEPA identified mobile sources as significant contributors to nine of the HAPs: *1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter.* FHWA currently considers these nine pollutants to be the priority mobile source air toxics (MSATs) for transportation projects.

USEPA has implemented programs to reduce HAPs from industrial sources and from vehicles and engines through new stringent emission standards and cleaner burning gasoline as well as addressing indoor air pollution though voluntary programs. FHWA estimates that USEPA's national control programs will reduce annual MSAT emissions by over 90% between 2010 to 2050.

The CAAA require that transportation plans, programs, and projects in nonattainment or maintenance areas that are funded or approved by the FHWA be in conformity with the State Implementation Plan (SIP) that represents the state's plan to either achieve or maintain

the NAAQS for a particular pollutant. Projects conform to the SIP if they are included in a fiscally constrained and conforming Metropolitan Transportation Plan (MTP) or Transportation Improvement Program (TIP).

East and West Baton Rouge Parishes are in the Baton Rouge maintenance area for the 2008 ozone NAAQS; therefore, transportation conformity applies to the project.

Climate change is also a concern. While the earth has gone through many natural climate changes in its history, there is general agreement that the earth's climate is currently changing at an accelerated rate and will continue to do so for the foreseeable future. Anthropogenic (human-caused) greenhouse gas (GHG) emissions contribute to this rapid change. Carbon dioxide (CO_2) makes up the largest component of these GHG emissions. Other prominent transportation GHGs include methane (CH_4) and nitrous oxide (N_2O). To date, no national standards have been established regarding GHGs, nor has USEPA established criteria or thresholds for ambient GHG emissions pursuant to its authority to establish motor vehicle emission standards for CO_2. However, there is a considerable body of scientific literature addressing the sources of GHG emissions and their adverse effects on climate. The affected environment for CO_2 and other GHG emissions is the entire planet.

The Air Quality Impact Assessment (AQIA) conducted for the proposed action evaluates potential air quality effects and addresses transportation conformity, the potential for the project to violate current CO air quality standards, MSATs, the relationship of the project to global climate change, construction air quality, and indirect and cumulative effects.

No quantitative analysis of the GHG emissions or climate change effects of the build alternatives was conducted because the potential change in GHG emissions is very small in the context of the affected environment. Because of the insignificance of the GHG impacts, those impacts will not be meaningful to choosing a preferred alternative.

3.8.2 Environmental Consequences and Mitigation

An AQIA was conducted to evaluate the potential air quality effects No-Build and Preferred Alternative. The AQIA evaluates transportation conformity, the potential for the project to violate current CO air quality standards, MSATs, the relationship of the project to global climate change, construction air quality, and indirect and cumulative effects in accordance with current federal regulations

and guidance and LA DOTD guidance. **Appendix F** includes the AQIA.

The No-Build Alternative will involve no additional capacity and no improvements to area interchanges. Relative to the CO hot spot analysis, without the project, it is unknown when improvements to I-10 interchanges in the project may occur. CO modeling is only required at signalized intersections that operate at LOS D or worse during any hour. Interchanges that currently operate at LOS D or worse will not improve without the project or future improvement projects.

The Preferred Alternative will increase the capacity of I-10 by adding one travel lane in each direction and modifying several interchanges. The air quality assessment concluded that the project is in the Baton Rouge ozone maintenance area. Therefore, the project is subject to transportation conformity. The Environmental Phase, Engineering Phase, and Feasibility/Environmental Study of the project are included in the current Baton Rouge Urbanized Area Capital Region Planning Commission's (CRPC) "*Transportation Improvement Program 2019-2022."* However, "*Metropolitan Transportation Plan MOVE 2042"* does not include the project as currently proposed. Therefore, the project does not currently conform to the SIP. After the CRPC adopted the current TIP and MTP, LA DOTD developed a detailed phasing plan for 16 separate project segments. Once the TIP and MTP are amended and the project segments, limits and descriptions are consistent with the proposed project, the project will conform to the SIP.

A CO hot-spot analysis was conducted in accordance with USEPA's *Guideline for Modeling Carbon Monoxide from Roadway Intersections.* Dispersion modeling was conducted using the CAL3QHC computer model recommended by USEPA for predicting CO concentrations near roadway intersections. Emission factors were computed using USEPA's MOVES2014a emissions model and the MOVES model runs provided by the CRPC for the Baton Rouge region. The modeled traffic conditions represented worst-case conditions and concluded that the project will not cause violations of the CO NAAQS.

The Preferred Alternative meets the criteria for a "Project with Higher Potential MSAT Effects" per FHWA's MSATs Guidance. The quantitative MSATs analysis concluded that MSAT emissions are comparable (less than 0.5% difference) between the No-Build and Preferred Alternative in Base Year 2017. MSAT emissions for all nine pollutants are slightly higher for the Preferred Alternative compared to the No-Build in Design Year 2040 with increases ranging from approximately 0.3% to 1.2%; however, USEPA's national control

programs are projected to reduce annual MSAT emissions by over 90% from 2010 to 2050. The magnitude of these reductions is so great that even with the project and associated traffic growth, MSAT emissions are predicted to be substantially lower in Design Year 2040 than Base Year 2017 regardless of the alternative. As a result, the Preferred Alternative is not expected to create any adverse MSAT effects.

The qualitative climate change (greenhouse gas) evaluation concluded that the potential change in GHG emissions due to the project is very small in the context of the affected environment. Because the GHG impacts are not substantial, those impacts will not be meaningful to choosing a preferred alternative.

The project may cause a temporary generation of construction-related pollutant emissions and dust that could result in short-term air quality effects that will be minimized by compliance with the procedures in the *Louisiana Standard Specifications for Roads and Bridges* as well as the required Storm Water Pollution Prevention Plan.

3.9 Hazardous Materials

3.9.1 Existing Environment

A survey of the project study area was conducted to identify sites that contain or potentially contain hazardous or toxic materials and/or wastes. Environmental Data Resources, Inc. (EDR) was contracted to provide a search of the project study area, using the standard American Society for Testing and Materials (ASTM) format for Phase I Environmental Site Assessments (ESAs). The EDR report included regulatory agency record reviews, including a search of federal and state environmental compliance databases.

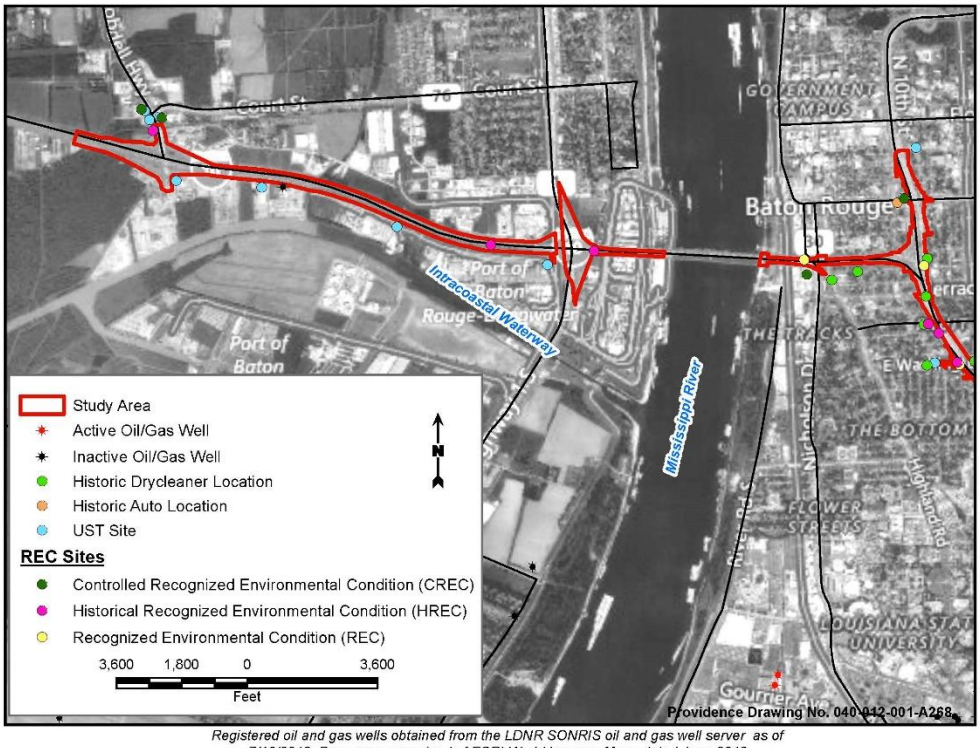
The database search was conducted to determine what, if any, information, release reporting, or registrations exist, or have been applied for, which might reveal a potential for contamination, indicate the possible presence of contamination, or assist in identifying recognized environmental conditions in connection with the project study area. The databases searched include: Federal ASTM E 1527-13 Databases, Federal ASTM E 1527-13 Supplemental Databases, and State ASTM E 1527-13 Databases.

Two types of sites were of particular interest for this project:

- Sites where hazardous materials or wastes are generated, stored, handled, or disposed
- Sites containing underground storage tanks (USTs)

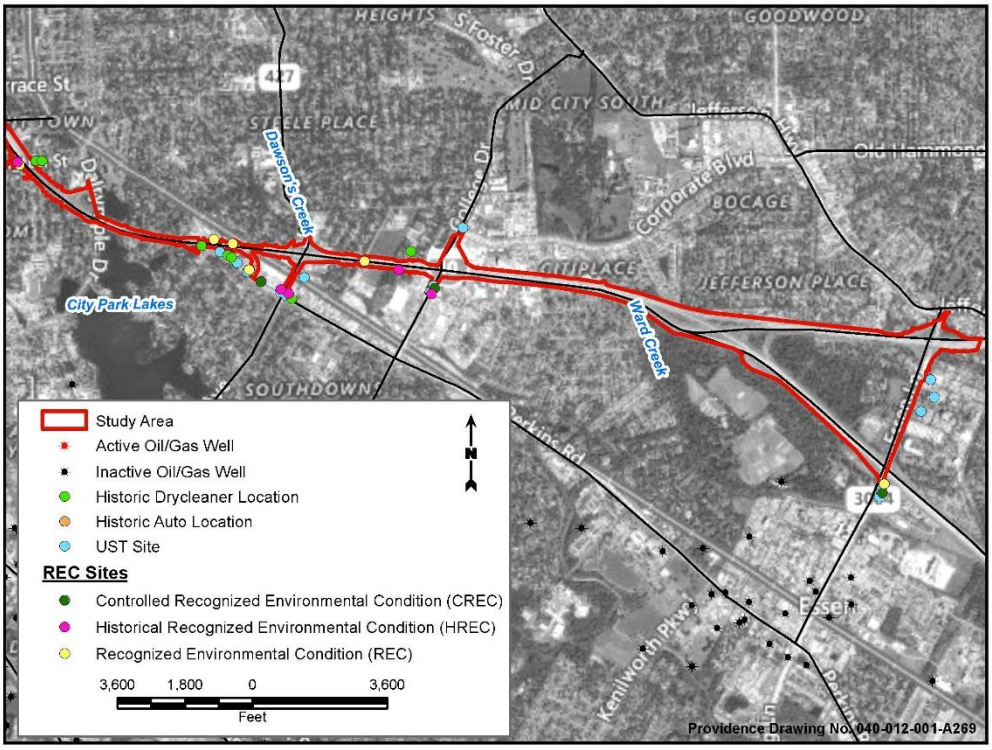
These sites, should they be contaminated, have the potential to directly impact the project study area if located in the existing or proposed ROW, or indirectly through migration of contamination off site and into the project ROW. Sites discussed in this section are identified on **Figures 6a** and **6b.**

FIGURE 6a
WEST BATON ROUGE PARISH HAZARDOUS MATERIALS SITES



Registered oil and gas wells obtained from the LDNR SONRIS oil and gas well server as of 7/10/2018. Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 6b
EAST BATON ROUGE PARISH HAZARDOUS MATERIALS SITES



Registered oil and gas wells obtained from the LDNR SONRIS oil and gas well server as of 7/10/2018. Base map comprised of ESRI World Imagery Maps dated June 2013.

Underground Storage Tanks (USTs)

USTs are defined as any one or a combination of tanks used to contain regulated substances, the volume of which, including connecting underground pipes, is ten percent (10%) or more beneath the surface of the ground. The Louisiana Department of Environmental Quality (LDEQ) requires by law that all USTs within the state be registered. The data search queried UST records maintained by the LDEQ.

The EDR report identified 14 UST sites in or adjacent to the proposed ROW; three of which have been closed, with the others remaining active. Eleven Historical Incident Leaking UST sites were identified in proximity to the proposed ROW area. No Leaking USTs were found in proximity to the proposed ROW.

Hazardous Waste Sites

Hazardous waste is defined by 42 United States Code (USC) § 6903 as “a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.” Potentially hazardous waste sites in the search area identified by the EDR report are shown on **Figures 6a** and **6b.** A copy of the EDR report can be found in **Appendix G**.

USEPA’s Superfund Enterprise Management System (SEMS) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities under Superfund and the National Priorities List (NPL). One site adjacent to the proposed ROW, McKinley High School, 800 East McKinley Street, Baton Rouge, was on this list for a mercury release resulting from a broken barometer.

Two SEMS archive sites (no longer of interest under Superfund) were listed:

- Gilmar Marine Services – 1500 River Road, Baton Rouge
- Valley Park School – 4510 Bawell Street, Baton Rouge

Gilmar Marine Services is a former barge cleaning facility and Valley Park School is the site of a former municipal landfill.

One Resource Conservation and Recovery Act – Large Quantity Generator, five Small Quantity Generators, and 12 Conditionally

Exempt Small Quantity Generators are located in the project study area.

Airgas, 1075 Cinclare Drive in Port Allen was identified as the large quantity generator.

The five small quantity generators identified are:

1. BP Lubricants USA Inc. – 1981 South Westport Drive, Port Allen
2. Love's Travel Stop #240 – 751 Lobdell Highway, Port Allen
3. Exxon Co. USA #51052 – 3191 South Acadian, Baton Rouge
4. Star Enterprise – 2959 College, Baton Rouge
5. Mary Bird Perkins Cancer Center – 4950 Essen Lane, Baton Rouge

The 12 conditionally exempted small quantity generators are:

1. Mallinckrodt Manufacturing LLC – 1060 Allendale Drive, Port Allen
2. Lhoist North America of Missouri, Inc. – 1785 South Westport Drive, Port Allen
3. Nugent Steel & Supply Co. – 1800 South Westport Drive, Port Allen
4. Graham Packaging Company Inc. – 1981 South Westport Drive, Port Allen
5. Division of Admin State Printing – 950 Brickyard Lane, Baton Rouge
6. International Piping Systems – 1700 South Westport Drive, Port Allen
7. Albertson's LLC – Albertsons #2709 – 2950 College, Baton Rouge
8. Chevron #109060 – 2929 College, Baton Rouge
9. Louisiana Secretary of State Archives – 3851 Essen Lane, Baton Rouge
10. Med-Aid Walk-In Medical Center – 5475 Essen Lane, Baton Rouge
11. Jacobs Plaza – 4949 Essen Lane, Baton Rouge
12. National Tire & Battery #195 – 4675 Essen Lane, Baton Rouge

Two state hazardous waste sites and one solid waste facility/landfill site were identified in proximity to the Preferred Alternative proposed ROW. Gilmar Marine and Baton Rouge Gas Works on Laurel Street are the two state hazardous waste sites and the LSU Agricultural

Center at Burden on Essen Lane was the lone solid waste facility/landfill site location.

EDR provides a classification of High-Risk Historical Records, or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns but may not show up in current government records searches. Under this category, they identified 53 historical auto and 14 historical dry cleaner sites in the project study area.

Oil and Gas Wells

To determine the location of oil and gas wells in the project study area, data was obtained from the LDNR's SONRIS database system. There are no registered oil and gas wells within the project study area. It is possible that wells have been drilled in the project study area but are not registered. Oil and gas wells, if located, would be shown on **Figures 6a** and **6b.**

3.9.2 Environmental Consequences and Mitigation

The No-Build Alternative does not involve any ground disturbances or ROW acquisitions. Therefore, no impacts to hazardous waste sites and oil and gas wells would be expected.

The potential impacts of the Preferred Alternative, in terms of hazardous waste sites and oil and gas wells, are based on the search of the LDNR's SONRIS database, LDEQ's EDMS database, and the Phase I ESA (see **Appendix G**). Personnel conducted a site reconnaissance of the subject property and adjacent properties on June 26 and 27, 2017. The purpose of the investigation was to observe whether any visible areas of environmental concern were evident on the subject property.

The term recognized environmental conditions (REC) means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. A CREC, or Controlled REC, is a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a "No Further Action" letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. HRECs, or Historic RECs, characterize a past

release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority without subjecting the property to any required controls. RECs, CRECs, or HRECs are not intended to include *de minimis* conditions that generally do not present a material risk or harm to public health or the environment and would not likely be the subject of an enforcement action if discovered by the appropriate regulatory authority.

Below is a summary of the various conditions documented in the Phase I ESA. Additional findings that did not illicit concerns are discussed in detail in the Phase I ESA (see **Appendix G**).

3.9.2.1 Recognized Environmental Conditions

The Phase I ESA was conducted in general conformance with ASTM Standard E1527-13, with some exceptions. All exceptions to, or deletions from, this practice are described in Chapters 1.0 and 2.0 of the Phase I ESA report, included in **Appendix G**. The term "the Property" is in reference to the proposed ROW and properties directly adjacent to the proposed ROW of the Preferred Alternative. The assessment has revealed evidence of recognized environmental conditions (RECs) with the subject property for the Preferred Alternative as defined below:

- The SEMS-ARCHIVE finding for Valley Park School, which is the site of a former municipal landfill partially within the I-10 ROW, represents a REC. Previous investigations at the site identified buried landfill material and groundwater constituents in exceedance of Risk Evaluation/Corrective Action Program (RECAP) Screening Standards (SS) (RECAP SS). In addition, subsurface work related to any potential construction within the landfill may be restricted or may require protective measures so that any contamination present is not exacerbated by the construction, and that the protective cover remains intact.
- The Roger A. Barielle site at 3235 Perkins on a western-adjoining property represents a REC based on the potential constituents of concern (COCs) remaining on the site associated with

historical USTs, the upgradient location, and proximity to the Property.

- The Essen Chevron at 7931 One Calais Avenue on an eastern-adjoining property represents a REC based on elevated concentration of TPH-DRO (total petroleum hydrocarbons-diesel range organics) in the soil associated with a historical diesel UST and the proximity to the Property.
- One historical auto (1028 E. Washington) and one historical dry-cleaning (2929 Perkins) site on the Property or adjoining properties that were identified in the Sanborn Maps and/or EDR High Risk Historical Databases represent RECs as these sites typically create environmental concerns; however, no record of previous assessments or closure of these sites by LDEQ could be found in EDMS.
- The Pearce Foundry & Machine Works and People's Ice & Fuel Co. (Myrtle and 11th) facilities identified in the Sanborn Maps, as summarized in Section 5.4.5 of the Phase I report represent RECs. These facilities possessed tanks that likely contained hazardous materials and present environmental concerns. No records of assessment or closure of these sites by LDEQ could be found in EDMS.
- Debris and evidence of hazardous waste, including a 55-gallon metal drum and hydraulic oil buckets were discovered on the Property beneath the Perkins on ramp during the site reconnaissance. The drum was in a deteriorated condition and its contents were unknown. Additionally, the waste drum and buckets were surrounded by distressed vegetation. These observations point to the potential for hazardous substances or petroleum products to exist on the Property at this location.

3.9.2.2 Controlled Recognized Environmental Conditions

- Circle K #9730 at 2300 South Acadian on a western-adjoining property represents a CREC based on the COC concentrations present at the site, the conditions under which the No Further Action (NFA) was granted, the upgradient location, and proximity to the Property.
- The ExxonMobil Corp #50608 (also listed under Calais Exxon) at 4555 Essen Lane on an

eastern-adjoining property represents a CREC based on the COC concentrations present at the site, the conditions under which the NFA was granted, and proximity to the Property.

- The Williams Travel Center (also listed under Nino's Casino) at 123 Lobdell Highway on a western-adjoining property represents a CREC based on COC concentrations present at the site, the conditions under which the NFA was granted, and proximity to the Property.
- The 1075 Government Street property represents a CREC based on the COC concentrations present at the site, the conditions under which the NFA was granted, the upgradient location, and proximity to the Property.
- The Circle K #2709717 at 3375 Perkins on an eastern-adjoining property represents a CREC based on the COC concentrations present at the site, the conditions under which the NFA was granted, and proximity to the Property.
- Matrix Food Store at 111 Lobdell Highway on the eastern-adjoining property represents a CREC based on the COC concentrations present at the site, the conditions under which the NFA was granted, and proximity to the Property.
- The Chevron USA Baton Rouge Plant at 1059 Brickyard Lane on the southern-adjoining property represents a CREC based on the COC concentrations present at the site, the conditions under which the NFA was granted, and proximity to the Property.

3.9.2.3 Historic Recognized Environmental Conditions

- The Exxon Co. USA #51052 (also listed under Stanford Exxon Store #5-1052) at 3191 S. Acadian Thruway on the southern-adjoining property represents an HREC based on past contamination and proximity to the Property.
- The Circle K #9725 (also listed under Star Enterprise and Texaco 44-398-0101) is located at 2959 College Drive, adjacent to the east of the property. This facility represents a HREC based on current COCs above RECAP SS, but below calculated site-specific screening standards which were found during site assessments. Though

closure was granted, this past contamination represents a HREC.

- The College Chevron (also listed under Chevron #109060) at 2929 College Dr. on an eastern-adjoining property represents a HREC based on the COC concentrations present at the site, the conditions under which the NFA was granted, and proximity to the Property.
- Racetrac #365 at 214 LA 415 on the eastern--adjoining property represents an HREC based on past contamination and proximity to the Property.
- The I-10 East incident represents a HREC based on nature of the incident and reported remedial activities.
- The I-10 East Mile Marker 158 incident represents a HREC based on nature of the incident and reported remedial activities.
- The Carson and Company Incident Site, which occurred on I-10 East at Exit 156 A Washington Street, represents a HREC based on the nature of the release, cleanup activities and regulatory involvement.
- The E&J Express Incident, which occurred at the foot of the Mississippi River Bridge on I-10 East, represents a HREC based on the nature of the release, cleanup activities and regulatory involvement.
- The Triple G Express Inc. incident, which occurred on I-10 on the Mississippi River Bridge, represents a HREC based on the nature of the release, cleanup activities and regulatory involvement.
- The Acadian Interstate Mobil at 3192 S. Acadian Thruway on an eastern-adjoining property represents an HREC based on the past contamination suspected with the auto shop, proximity to the Property, and Comfort Letter, indicating no further action.

De Minimis Conditions

- The I-10 East incident in May 2006 that resulted in a spill of an unknown material along I-10 Eastbound in East Baton Rouge Parish represents a *de minimis* condition based on the reported minor

cleanup and unknown location of the spill that would make further investigation problematic.

- Solid waste identified on the Property, including wood, metal, plastic materials, waste tires, and chemical buckets constitute de minimis conditions.

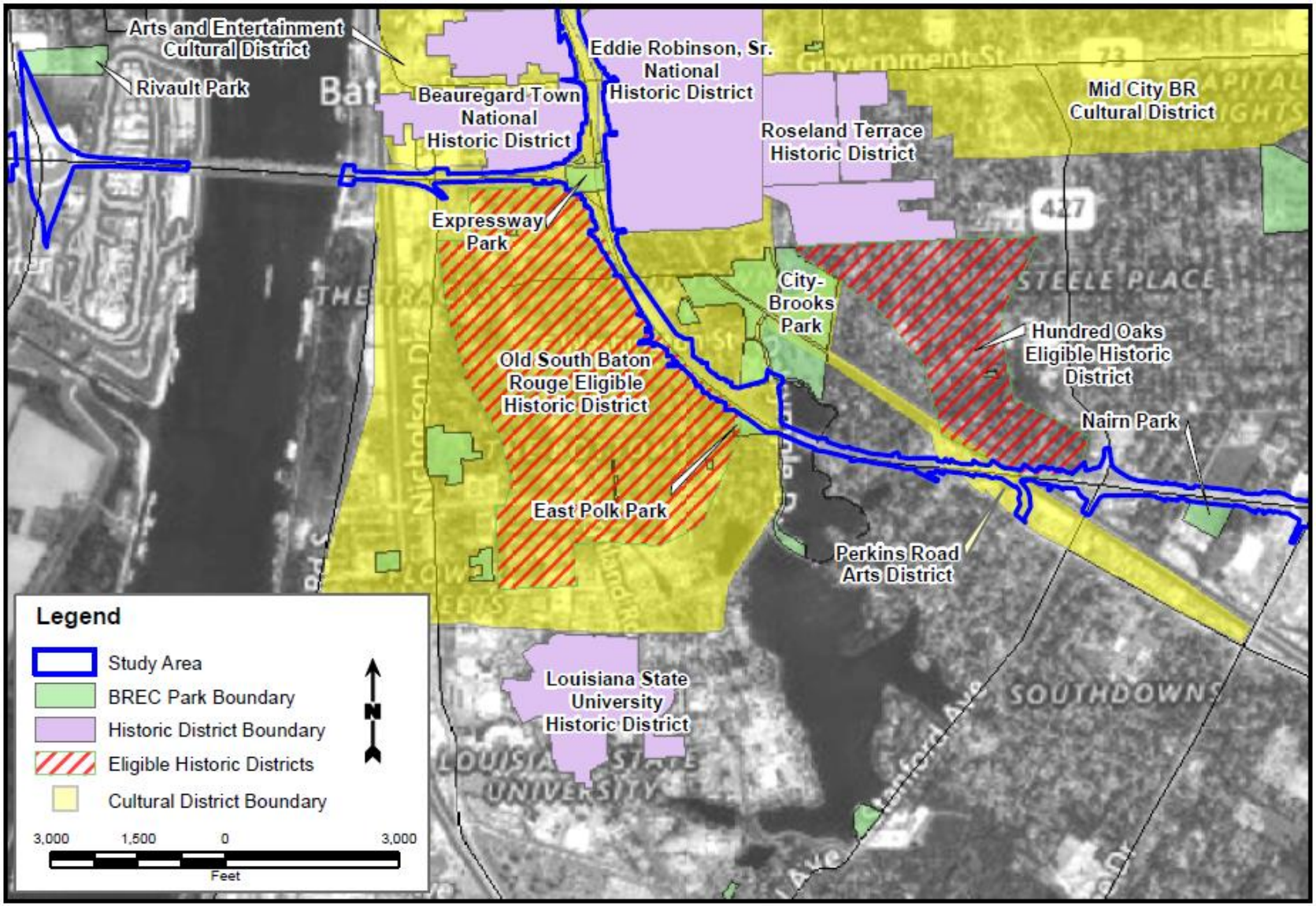
3.10 Public Lands and Recreation

3.10.1 Existing Environment

Within the project study area boundary lie four parks, bike trails, and Burden Museum and Gardens. There are also several facilities adjacent to or in proximity to the study area. Expressway Park, East Polk Street Park, lakes and trails associated with City-Brooks Park as well as the Knock Knock Children's Museum, and Nairn Park are all located in the project study area. **Figure 7** shows area parks adjacent or in the project study area. The Mississippi River Levee on the east bank of the project area supports a bike and pedestrian trail, with the nearest trailhead, the South Boulevard Trailhead, located just to the north of I-10 off River Road. Louisiana State University's (LSU) Burden Museum and Gardens is located between Essen Lane and I-10 at the eastern terminus of the project area. Burden supports multiple trails, gardens, the Rural Life Museum, promotes education through outreach events and school field trips, and operates as a research station for LSU.

Adjacent to the study area and located off Braddock Street is the Baranco-Clark YMCA. The Dr. Leo S. Butler Community Center is located off East Washington in proximity to the project study area. Additionally, the Baton Rouge Country Club, a private facility, located just north of the I-12/Essen Lane interchange provides golf, tennis, and other recreational pursuits to its members.

FIGURE 7
PARKS, CULTURAL, AND HISTORIC DISTRICTS



3.10.2 Environmental Consequences and Mitigation

Public lands and recreation areas (public and private) were avoided to the extent possible during the project development process. The No-Build Alternative is not expected to affect public land or recreation areas, nor will it create any new recreational opportunities.

The Preferred Alternative will improve access to several area parks, including East Polk Street Park and City Park. The addition of a multiuse trail from Expressway Park to Dalrymple, which will connect to a new trail within the boundaries of East Polk Street Park, will provide access to Dalrymple, the City Park Lake, and City Park for pedestrians, cyclists, and users of East Polk Park. It is an access that does not exist today.

While the preliminary project design reflects the acquisition of 0.04 acres of East Polk Street Park, the minimal portion to be acquired is adjacent to existing I-10 ROW and not within any active areas of the park. A detailed discussion of the impact to East Polk Street Park is in Section 3.12.

Temporary closures are expected for the trail along City Park Lake in areas where the trail crosses under I-10. During construction, overhead activities may require the temporary closure of the trail until conditions are safe to pass under again. This impact is further discussed in Section 3.12.

Removal of the Perkins ramps will allow for additional parking, the establishment of a bike and pedestrian path and greenspace, and the extension of Greenwood Drive to Perkins.

LA DOTD's commitments are dependent upon the development of agreements with the City-Parish relative to maintenance of new sidewalks, shared-use paths, and JUAs. Such agreements will also include lighting and landscape maintenance.

3.10.3 Pedestrian and Bicycle Concerns

The No-Build Alternative will not involve construction in the immediate short-term; therefore, it will neither provide for nor interfere with pedestrian and bicycle routes.

The Preferred Alternative is proposed with elements that are in accordance with area master plans either developed or under development for pedestrian and bicycle improvements and LA DOTD Complete Streets Policy. Specifically, this project will create a multiuse path to connect Expressway Park to Dalrymple and preserve connectivity for non-motorized users between streets that

currently pass under I-10. Lighting and landscaping will enhance the proposed and existing routes. Crosswalks will be restored and/or included to ensure Complete Streets compliance.

Crosswalks will also be installed in accordance with LA DOTDs Complete Streets policy along Acadian, which will allow pedestrians and cyclists travelling on the east side of Acadian to cross to the west side for safe crossing of the I-10 ramps and to cross between restaurants and businesses located on both sides of Acadian. Additionally, these new crossings and trail could be incorporated into a larger vision to connect Acadian to Nairn Park, where safe crossing of I-10 can be accomplished over the new Nairn bridge.

Removal of the Perkins ramps will allow for the extension of Greenwood Drive and a new multiuse path from the Perkins Overpass area along the new extension to the Acadian Village shopping center and Perkins. Presently, there is no dedicated pedestrian or bike path to link the Perkins Overpass with the restaurants and shopping areas of the Perkins Road Arts District and Acadian Village and Acadian-Perkins shopping centers.

The Nairn bridge over I-10 will be replaced under the Preferred Alternative. As proposed, the new bridge will accommodate a multiuse path on the east side and a pedestrian only path on the west side. Both paths will end in proximity to where bridge lanes return to grade (ground level), allowing East Baton Rouge Parish to connect the multiuse trail with the existing trail leading to the Foreign Language Academic Immersion Magnet School and future connectivity with a new sidewalk on the west side.

3.11 Cultural Resources

3.11.1 Existing Environment

Preliminary research was conducted for the project study area using the Louisiana Department of Cultural, Recreation, and Tourism's (LDCRT's) Louisiana Cultural Resources Map Geographic Information System (GIS) database and the National Register of Historic Places (NRHP) database for previously recorded historic structures, archaeological sites and properties to identify known resources in the project area. Two NRHP listed districts, the Beauregard Town Historic District (BTHD) and the Eddie Robinson, Senior Historic District (ERSHD) are located to the north of I-10 and to the east of I-10/I-110, respectively, in the project area (see **Figure 7**). No archaeological resources were noted.

The State Historic Preservation Officer's (SHPO's) response to the Solicitation of Views, March 10, 2017, reflected the need to conduct a Cultural Resources Survey (CRS). A CRS was conducted on the preferred alternative.

3.11.2 Environmental Consequences and Mitigation

FHWA must consider the potential effects of a proposed action on historic properties per Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The No-Build Alternative will have no adverse effect because no ground disturbances or ROW acquisitions will occur as a result of this project.

Phase I CRS was conducted within the Area of Potential Effect (APE) for the Preferred Alternative between May and July of 2017. Archival research was conducted, including consulting maps, site files, and project files through the Louisiana Division of Archaeology's online Louisiana Cultural Resources Map GIS database, Louisiana Historic Standing Structures Survey, NRHP database, and the Louisiana State Library.

Federal regulations define the APE as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist." For the purposes of the archaeological survey, the APE coincides with the proposed ROW and is referred to as the direct APE. It should be noted that given the amount of disturbance from the original construction of the interstate, archaeological survey was limited to areas of proposed new ROW that may be required for construction.

For the purposes of the standing structure survey, an indirect APE consisting of the direct APE and a 250-foot (ft) buffer (indirect APE) was used in the survey. This distance addresses direct construction impacts, as well as indirect impacts such as viewshed. Buildings located behind the sound and visual barriers along I-10 were not surveyed because the barrier blocks the views to/from the buildings.

Two NRHP listed districts border the direct and/or indirect APE as defined, BTHD and ERSHD. The locations of these districts are shown on **Figure 7**. Specifically, the BTHD is generally bounded by North Boulevard, St. Louis, South Boulevard, and South 10th Street in downtown Baton Rouge. The ERSHD is generally bordered by North Boulevard, I-10/I110, Terrace Avenue, and South 18th Street, also in the downtown area of Baton Rouge.

Due to the project's location in a dense urban environment, archaeological investigation was limited by the presence of numerous buried utilities, concrete and paved parking lots, roads, driveways, drainages, and heavily disturbed construction areas. Likewise, the project area's disturbed urban nature diminishes the likelihood of deeply buried intact cultural deposits. No investigations were conducted in inundated areas or in areas that contained numerous buried utilities and electrical transmission lines or in pipeline corridors. No sites were recorded during the survey.

For the standing structure survey, the entire project area was surveyed and all structures in the direct and indirect APE evaluated to determine if they were of the appropriate age for recordation. Structures that were deemed appropriate for recordation were then evaluated using NRHP criteria to determine eligibility for nomination to the NRHP (36 CFR 60.4). An estimated construction date of 1970 or previous was used during the evaluation of the standing structures. This adjustment provides an additional three years so that buildings that are approaching 50 years of age, and those that will be 50 years of age at the likely time of construction, are identified and assessed. Buildings considered younger than 47 years of age were not documented.

A total of 605 structures approaching or over 50 years of age were identified within the direct and indirect APEs. Of the 605 structures recorded during fieldwork, 103 were previously recorded. A total of 41 of the 605 structures are considered contributing elements to the BTHD; all of which are in the indirect APE. Twenty-two of the 605 structures are within the direct APE. There are no structures in the direct APE that were recommended individually eligible for nomination to the NRHP, but the Christian Bible College (ESI# 347, 17-00422) was identified as a structure that should be a contributing element to the BTHD. The building is located outside of the ROW necessary for construction of the proposed project.

Nine structures within the indirect APE were recommended as eligible for nomination to the NRHP, most under Criteria A and/or C. Criteria A is for events, where the event has made a substantial contribution to the broad patterns of our history. Criteria C is for design/construction, where these exhibit distinctive characteristics of a type, period, or method of construction, are the work of a master, are of high artistic value, or represent a substantial and distinguishable entity whose components may lack individual distinction. The nine structures are:

- Baranco-Clark YMCA at 1735 Thomas H. Delpit Drive (ESI# 213, 17-02055)
- Saint Francis Xavier Catholic Church School at 1150 S. 12th Street (ESI# 324, 17-02155) with the Saint Francis Xavier Catholic Church School Office at 1134 Julia Street (ESI# 323, 17-02154)
- Baton Rouge Foreign Language Academic Immersion Magnet by architect A. Hayes Town at 802 Mayflower Street (ESI# 336, 17-00220)
- Progressive Baptist Church at 998 Julia Street (ESI# 434, 17-02184)
- Calvary III Baptist Church, 1911 Georgia Street (ESI# 250, 17-02089)
- Webb's Service Station at 1057 North Boulevard (ESI# 578, 17-02313)
- Knox Cottage at 1029 Charles T. Smith Drive (ESI# 584, 17-02319)
- State School for the Blind/Visually Impaired at 1120 Government Street (ESI# 609, 17-02343)

Due to their distance from the direct APE, none of the nine structures were determined to be affected by the proposed project.

The boundaries of the APE and indirect APE were determined appropriate for the project and the eligibility of the nine properties identified in the BTHD for NRHP listing confirmed. Additionally, it was determined that Christian Bible College should be listed as a contributing element to the district.

The review also determined that the Old South Baton Rouge community qualifies for listing as a historic district under Criteria A and that the Hundred Oaks Residential area qualifies for listing as a historic district under Criteria C. **Table 3-9** lists 13 structures that appeared to be in the direct APE and would be proposed as contributing elements to a proposed OSBRHD. **Table 3-10** lists the six structures that appeared to be in the direct APE and contribute to the proposed HOHD. Those structures that are in the proposed apparent ROW are noted as such.

TABLE 3-9
IDENTIFIED (IN THE DIRECT APE) CONTRIBUTING ELEMENTS TO A PROPOSED OLD SOUTH BATON ROUGE HISTORIC DISTRICT

Address	SHPO Number	Property In/Out of ROW
1851 Kentucky Street	17-02100	In
1855 Kentucky Street	17-02099	In
1839 Kentucky Street	17-02101	In
931 Royal Street	17-02167	Out
928 Napoleon Street	17-01137	Out
943 Maximillian Street	17-01159	In
944 Maximillian Street	17-02175	In
2122 Carolina Street	17-02223	Out
2035 Missouri Street	17-02235	Out
945 East Boulevard	17-01370	In
996 Terrace Avenue	17-02146	In
1026 East Washington	17-02081	In
1006 Julia Street	17-01412	In
1010 Julia Street	17-02182	In
1807 Georgia Street	17-02082	In
1666 Braddock Street	17-02057	Control of Access ROW
1704 Braddock Street	17-02056	Control of Access ROW

TABLE 3-10
IDENTIFIED (IN THE DIRECT APE) CONTRIBUTING ELEMENTS TO A PROPOSED HUNDRED OAKS HISTORIC DISTRICT

Address	SHPO Number	Property In/Out of ROW
3218 South Eugene	17-01888	In
3144 South Eugene	17-01894	In
3154 South Eugene	17-01892	In
2547 Honeysuckle Avenue	17-01870	In
2536 Honeysuckle Avenue	17-01882	In
2567 Rhododendron	17-01887	In

The Perkins Road Overpass Area possesses buildings that were determined eligible under Criteria A and C as part of a Perkins Road Overpass Multiple Property Submission (PROMPS). Properties eligible under this proposed listing are shown in **Table 3-11**.

TABLE 3-11
IDENTIFIED (IN THE DIRECT APE) CONTRIBUTING ELEMENTS OF A PERKINS ROAD OVERPASS MULTIPLE PROPERTY SUBMISSION

Address	SHPO Number	Property In/Out of ROW
2265 Christian Street	17-01905	In
2958 Perkins	17-01915	In
2904 Perkins	17-01920	In
2312 Ferndale Avenue	17-01934	Out

FHWA, in conjunction with LA DOTD, considered all the findings relative to properties in or adjacent to the project's apparent ROW. FWHA determined that the proposed project will have an adverse effect on historic properties. Pursuant to 36 C.F.R. 800, the regulations implementing Section 106 of the NHPA (54 U.S.C. 306108), FHWA initiated formal consultation with the SHPO.

Table 3-12 provides details on the 17 historic properties determined to be adversely affected with the proposed OSBRHD and HOHD and PROMPS. No properties in the existing BTHD or ERSHD were determined to be adversely affected. A Programmatic Agreement (PA) developed for this project addresses the mitigation for the project's adverse effects on historic properties. A PA is a legally binding agreement/document between a state transportation department and other agencies which establishes a process for review, consultation, and compliance with one or more federal laws, in this case, Section 106 of the NHPA.

TABLE 3-12
ADVERSELY AFFECTED HISTORIC PROPERTIES

PROPERTY				ALTERNATIVE AREA		
LHRI #	Name	Address	NRD Contributing Elements	I-10 Mainline Eastbound	I-10 Mainline Westbound	Washington/ Dalrymple Interchange
Proposed OSBRHD				X		X
17-01159		943 Maximillian St.	OSBRHD	X		
17-01370	Leo's Service Market	945 East Blvd.	OSBRHD	X		
17-01412		1006 Julia St.	OSBRHD	X		
17-02057		1666 Braddock St	OSBRHD	X		
17-02056		1704 Braddock St	OSBRHD	X		
17-02081	Bell's Tire Shop	1026 E. Washington St.	OSBRHD	X		X
17-02100		1851 Kentucky St.	OSBRHD	X		X
17-02101		1839 Kentucky St.	OSBRHD	X		X
17-02146		996 Terrace St.	OSBRHD	X		
17-02175		944 Maximillian St.	OSBRHD	X		
17-02182		1010 Julia St.	OSBRHD	X		
Proposed PROMPS				X	X	
17-01905	Fresh Salon	2265 Christian St.	PROMPS	X		
17-01920	Overpass Merchant	2904 Perkins Rd.	PROMPS		X	
Proposed HOHD					X	
17-01870		2547 Honeysuckle Ave.	HOHD		X	
17-01887		2567 Rhododendron Ave.	HOHD		X	
17-01888		3218 S Eugene St.	HOHD		X	
17-01892		3154 S Eugene St.	HOHD		X	

Through the Section 106 consultation process Consulting Parties were identified and those that participated consist of FHWA, LA DOTD, the SHPO, the Advisory Council on Historic Preservation (ACHP), Knock Knock Children's Museum, Old South Baton Rouge Economic Redevelopment Group, and several area property owners. Additionally, FHWA invited BREC and the Louisiana Trust for Historic Preservation (LTHP) to participate as possible parties in mitigation and as signatories to the PA. A public notice was provided via notice in the Advocate and through the US Mail.

The Section 106 Consulting Parties met on three occasions to assess impacts to and determine the most effective means of minimizing and mitigating for adverse effects. The selected concepts for minimizing and mitigating for the adverse effects are defined in the PA, which stipulates the actions that must occur.

As defined in the PA, the following actions are stipulated:

1. Vibration Monitoring

   Vibration monitoring will be implemented to minimize harm to properties in the existing and proposed districts and multiple property submission area. While construction methods have not been determined, regular construction activities for roadways typically do not cause vibrations that rise to the level of property damage. LA DOTD has specifications for monitoring vibrations during pile driving with specific procedures for documenting adjacent structures before and after pile driving activities in the event that pile driving is a construction method utilized for this project.

2. Development and Provision of Historic Contexts for the Proposed OSBRHD, HOHD, and PROMPS

   Contexts will provide information on:

   i. the initial layout and development of the neighborhoods
   ii. substantial natural landscape and built environmental influences on development
   iii. important economic and social factors
   iv. details on individual structures will not be provided except where necessary to illustrate neighborhood development

3. Historic District Public Informational Displays in Expressway Park and East Polk Street Park

   BREC, in conjunction with FHWA, LA DOTD, and the SHPO will develop public informational displays for the BTHD, ERSHD, and the proposed OSBRHD. Public information meetings will be held to garner public input on the content and type of displays favored by the public.

4. Historic Markers in LA DOTD ROW

   LA DOTD, in coordination with FHWA and the SHPO will develop context for and install historical markers within LA DOTD ROW providing historical information relative to the proposed PROMPS and HOHD.

5. Recordation

   LA DOTD, in coordination with FHWA, will provide documentation to the SHPO of all historic buildings within the proposed project ROW or that are located on parcels to be acquired by the project. Recordation will include exterior photographs, architectural descriptions, and location maps or aerial photographs.

6. Relocation of Buildings

   Buildings within the proposed ROW that have been determined historic and determined eligible and feasible for relocation and marketing by LA DOTD, FHWA, and the LTHP will be transferred to the LTHP for relocation on suitable property outside the proposed ROW within the respective district.

   For buildings with COA issues, alternative access will be provided, negating the need for relocation or demolition. Should current owners elect not to accept alternative access, the properties will be purchased and either, sold as is with new access or demolished if new owners are not located within a reasonable timeframe, as defined in the PA.

Most of the buildings which are contributing elements to the proposed OSBRHD and HOHD are located along the edges of the districts; removing the buildings will not create a misalignment in a central core of the historic districts nor impact the overall integrity of the proposed districts as a whole. It will be possible to move some of the structures, particularly those in the proposed OSBRHD, to vacant lot locations within the district.

Due to the limited number of properties that are included in the proposed PROMPS, the loss of any structure has greater impact than is the case for the contributing elements to the proposed historic districts.

3.12 Section 4(f) and or 6(f) Properties

3.12.1 Existing Environment

Title 49 USC Section 303, previously Section 4(f) of the USDOT Act of 1966, and 23 Code of Federal Regulations (CFR) 774 states that the USDOT and FHWA agencies may approve the use of land from significant publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites; however, the use may be approved if a determination is made that there is no feasible and prudent alternative to the use of the land and the action includes all possible planning to minimize harm to the property resulting from use. FHWA determines the application of Section 4(f) unless the federal, state, or local officials having jurisdiction over the land determines that the entire site is not significant. In the absence of a determination, the Section 4(f) land is presumed to be significant. Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) Section 6009 simplified the process and approval for projects that have only *de minimis* impacts.

Historic properties are first mentioned in Section 3.11. As noted, a total of 605 buildings were recorded during the standing structure survey portion of the Cultural Resources Survey, of these, 22 buildings were listed in the APE and were evaluated for Section 4(f) eligibility.

Parks evaluated for Section 4(f) consideration were identified in or adjacent to the project area. Those properties include:

- Expressway Park
- East Polk Street Park
- City Park Golf Course
- Nairn Park
- Trail around City Park Lake

The National Park Service (NPS) Land and Water Conservation Fund (LWCF) provides grants to state and local governments for the acquisition and development of public outdoor recreation areas and facilities. Section 6(f) of the Land and Water Conservation Act (CFR Title 36, Chapter 1, Part 59) requires the acquisition of Section 6(f) lands and facilities be coordinated with the Department of the Interior

(USDOI). Typically, replacement in kind is required for acquisition of Section 6(f) lands and facilities.

A search conducted through the NPS's LWCF website revealed that 14 grants were issued for parks and recreation facilities in East Baton Rouge Parish between 1966 and 2003 (http://waso-lwcf.ncrc.nps.gov). The closest Section 6(f) facility to the project area is Expressway Park. Discussions with the LDCRT indicate that Expressway Park is no longer considered a Section 6(f) facility (see **Appendix C** for email correspondence).

3.12.2 Environmental Consequences and Mitigation

The No-Build Alternative will not affect the Section 4(f) resources listed above.

3.12.2.1 Section 4(f) Evaluation

Tables 3-9, 3-10, and **3-11** in Section 3.11.2 identified 22 properties within the APE that are considered contributing elements of two proposed historic districts and one multiple property submission, which defines them as Section 4(f) properties. **Table 3-12** in Section 3.11.2 defines 17 of the 22 properties as having the potential to be adversely affected. The proposed action could require the acquisition and removal these 17 buildings. Acquisition and removal of any contributing element is considered a Section 4(f) use as defined in 23 CFR 774.17(1). The remaining five contributing elements were determined not to be adversely affected, which means that effects on these structures are considered *de minimis* under Section 4(f). *De minimis* evaluations are discussed in Section 3.12.2.2.

Figures 8 and **9** show the location of the 17 Section 4(f) properties, while **Table 3-13** presents the proposed use for each of the properties.

FIGURE 8
SECTION 4(F) PROPERTIES IN THE PROPOSED OSBRHD

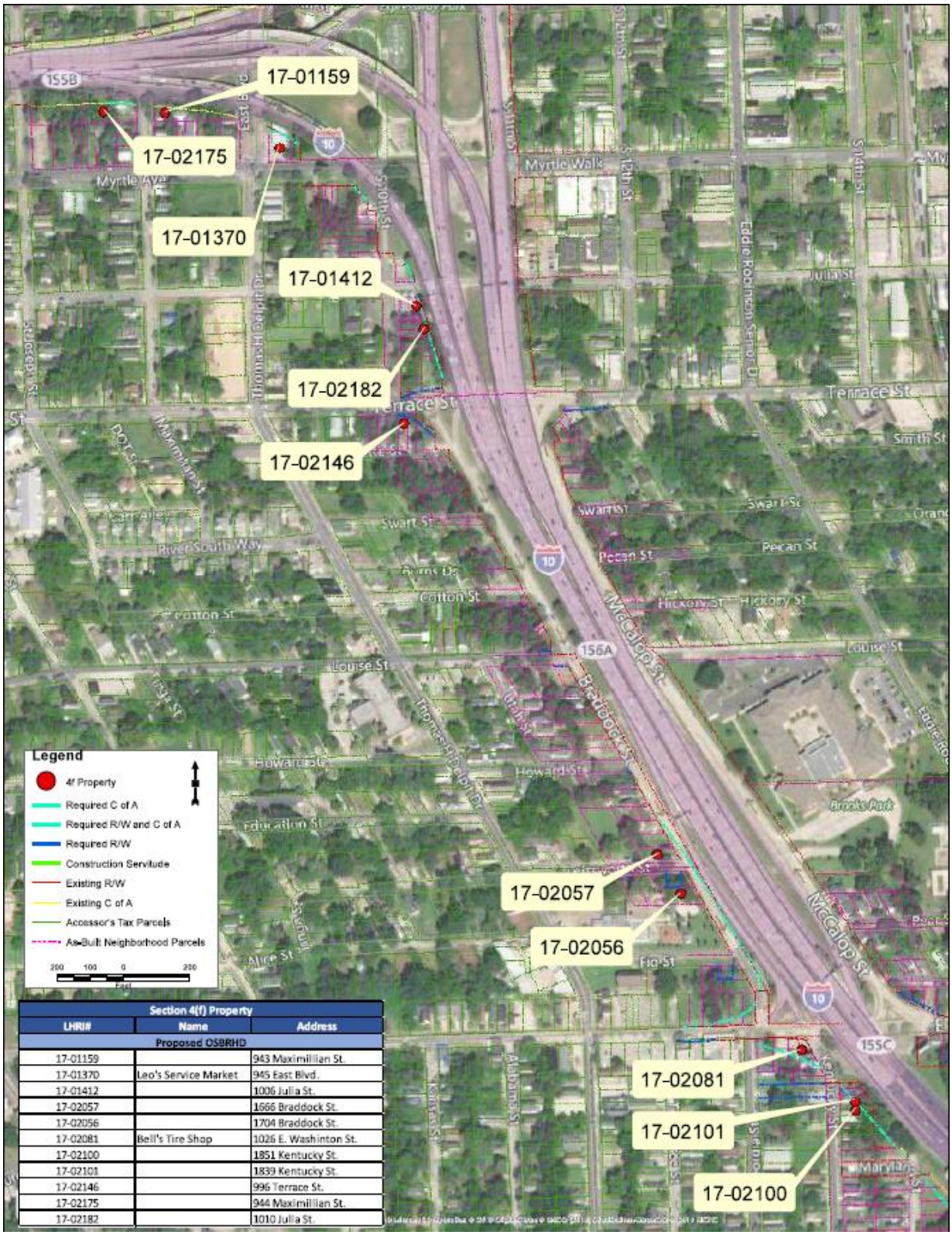
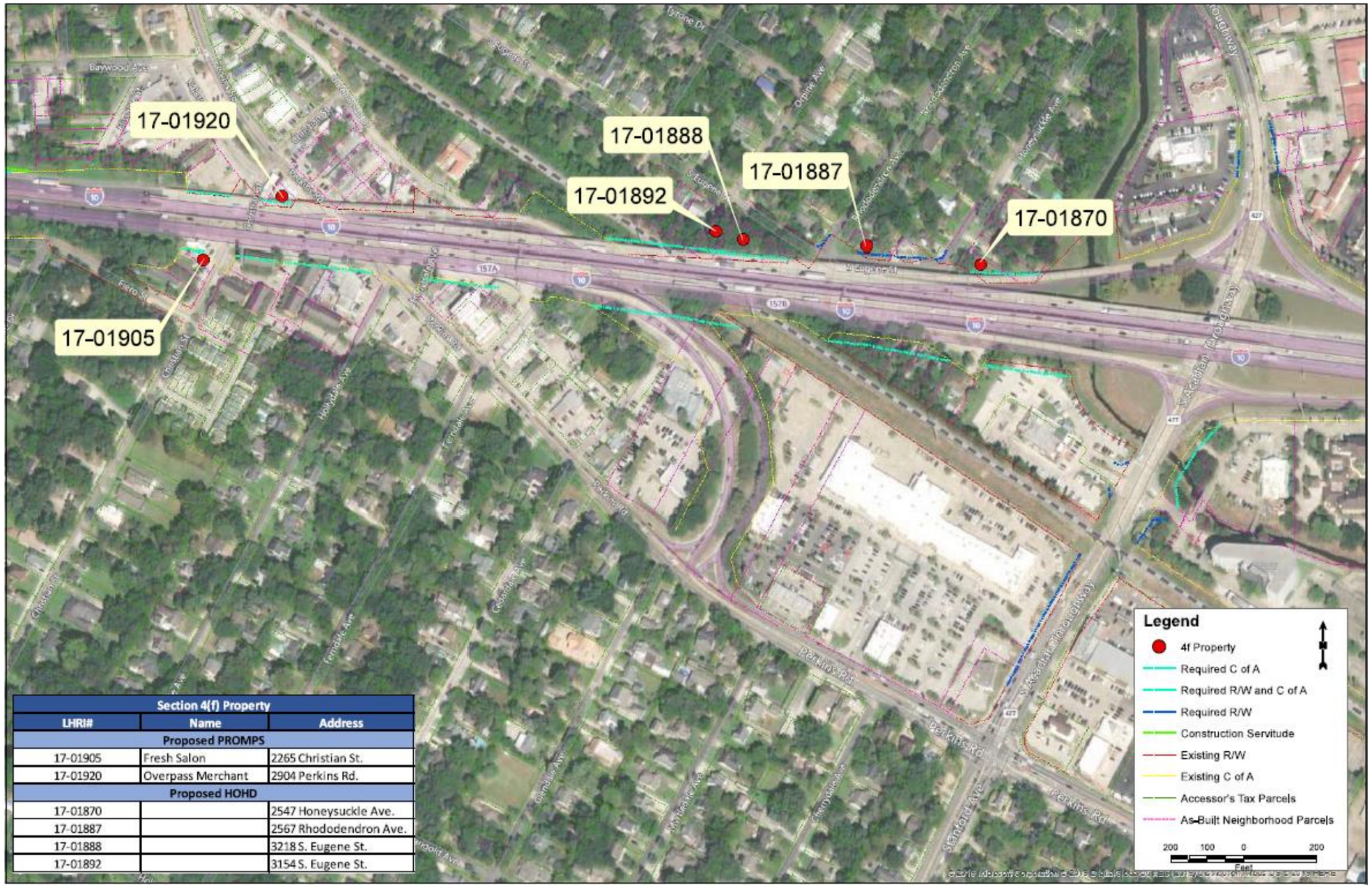


FIGURE 9
SECTION 4(F) PROPERTIES IN THE PROPOSED PROMPS AND HOHD



Section 4(f) Property		
LHRI#	**Name**	**Address**
Proposed PROMPS		
17-01905	Fresh Salon	2265 Christian St.
17-01920	Overpass Merchant	2904 Perkins Rd.
Proposed HOHD		
17-01870		2547 Honeysuckle Ave.
17-01887		2567 Rhododendron Ave.
17-01888		3218 S. Eugene St.
17-01892		3154 S. Eugene St.

TABLE 3-13
SECTION 4(F) PROPERTIES AND PROPOSED USE

Section 4(f) Property			Proposed Use
LHRI #	Name	Address	
Proposed OSBRHD			Acquisition and removal of contributing elements
17-01159		943 Maximillian St.	Acquire and move or demolish
17-01370	Leo's Service Market	945 East Blvd.	Acquire and demolish
17-01412		1006 Julia St.	Acquire and move or demolish
17-02057		1666 Braddock St	Alter access and resale or demolish[1]
17-02056		1704 Braddock St	Alter access and resale[1]
17-02081	Bell's Tire Shop	1026 E. Washington St.	Acquire and demolish
17-02100		1851 Kentucky St.	Acquire and move or demolish
17-02101		1839 Kentucky St.	Acquire and move or demolish
17-02146		996 Terrace St.	Acquire and move or demolish
17-02175		944 Maximillian St.	Acquire and move or demolish
17-02182		1010 Julia St.	Acquire and move or demolish
Proposed PROMPS			Acquisition and removal of contributing elements
17-01905	Fresh Salon	2265 Christian St.	Acquire and demolish
17-01920	Overpass Merchant	2904 Perkins Rd.	Acquire and demolish or remove modern addition
Proposed HOHD[2]			Acquisition and removal of contributing elements
17-01870		2547 Honeysuckle Ave.	Acquire and move or demolish
17-01887		2567 Rhododendron Ave.	Acquire and move or demolish
17-01888		3218 S Eugene St.	Acquire and move or demolish
17-01892		3154 S Eugene St.	Acquire and move or demolish

[1] The property is affected by Control of Access restrictions, meaning that the current driveway access to these properties from Braddock Street will not be available. New access to the properties is proposed that would allow the residences to remain and/or remain and be resold or be demolished.
[2] The proposed HOHD is lacking in available lots on which to move existing structures. It is likely that only one of the four affected structures could be moved within the district, the others would be demolished.

The Section 4(f) Evaluation is in **Appendix H.** No avoidance alternatives met the project's purpose and need. Avoidance alternatives considered included:

- Not to build
- A movable barrier – provides for a concrete barrier system that can be moved via a "zipper" machine to create additional travel lanes in either direction during periods of high traffic congestion)
- A direct connection to I-10 from LA 1/LA 30 – involves the construction of an additional lane on the eastbound side of the existing MRB to accommodate LA1 traffic heading eastbound that would connect to Nicholson Drive
- The Baton Rouge Loop alternative – provides for a new highway that "loops" around the urban center of Baton Rouge through adjacent parishes

Measures to minimize harm were identified, analyzed, and incorporated since there were no viable avoidance alternatives. These measures included reduction of ROW, widening to the inside where geometrically possible, the use of connector roads to maintain access, shifting roads as practicable, consideration of different intersection control types to reduce ROW requirements, and site-specific agreements.

Build alternatives remaining after the avoidance analysis included:

- Construction of a high pass – this is a tolled multilane facility on structure above and predominantly in the median of existing I-10
- Construction of a new bridge over the Mississippi River accommodating one directional traffic (the existing bridge would convert to one direction)
- Construction of multiple additional travel lanes – involves a new MRB and reconstruction or reconfiguration of the I-10 interchanges in the project area
- Construction of an additional travel lane in each direction, with no widening of the MRB
- The addition of I-110 frontage roads to connect Government Street (Government) to Dalrymple to the concept of adding a travel lane in each direction

All alternatives that involved construction of a new MRB would increase the total number of acquisitions, including Section 4(f) properties as a result of the ROW that would be necessary to accommodate approaches to a new bridge. Even the high pass alternative would result in additional acquisitions as a result of a new bridge, because it would leave existing ROW in order to cross the river. The single lane addition in each direction without a new bridge can incorporate reduced ROW and geometric considerations to minimize impacts. Frontage roads along with a single lane addition resulted in adverse effects to additional 4(f) properties due to additional ROW.

Per 23 CFR 774.7(c) "If there is no feasible and prudent avoidance alternative, the Administration/FHWA may approve only the alternative that causes the least overall harm in accordance with §774.3(c)." The least overall harm analysis considers the potential impacts associated with possible build alternatives.

An evaluation to determine potential harm associated with the build alternatives that could meet purpose and need was preliminarily conducted and is presented in **Appendix H**. The build alternatives evaluated included the high pass, new bridge, frontage roads with one additional travel lane in each direction, multiple additional travel lanes in each direction, and one additional travel lane in each direction (the Preferred Alternative). The preliminary evaluation concluded that the Preferred Alternative was the construction option of least overall harm; all other build alternatives would result in more harm to Section 4(f) properties such as existing historic districts, proposed historic districts, and adjacent parks and to other non-4(f) properties including churches, residences, and businesses.

As identified in **Table 3-13**, 17 structures are likely to be adversely affected by the implementation of the Preferred Alternative. Mitigation for impacts to these historic structures is presented in the PA discussed in Section 3.11.2.

3.12.2.2 Section 4(f) *de minimis* Evaluation

As previously noted, *de minimis* evaluations are required for Section 4(f) properties when the use of the property is negligible and the net effect on the property is not considered adverse. Section 3.12.1 identified up to 22

structures and five parks/recreation areas that may be evaluated as Section 4(f) resources. Seventeen of the properties supporting contributing elements were determined to have adverse impacts and were discussed in Section 3.12.2.1. The remaining five of the 22 structures were determined to not be adversely affected. As such, they require a *de minimis* evaluation. Of the five recreation areas identified, two require a *de minimis* evaluation. **Appendix H-2A and 2B** contains the Section 4(f) *de minimis* evaluations for cultural resources and recreational resources, respectively.

A *de minimis* evaluation was required for the five historic properties identified below. They are grouped by location in the proposed historic districts and the SHPO numbers are provided in parentheses:

- PROMPS
  - 2954 Perkins, part of 2958 Perkins (17-01915)
- OSBRHD
  - 1807 Georgia (17-02082)
  - 1855 Kentucky (17-02099)
- HOHD
  - 3144 South Eugene (17-01894)
  - 2536 Honeysuckle (17-01882)

For the four properties in the OSBRHD and HOHD, the structures are not affected by the proposed project. Small portions of the parcels of which the structures are a part are proposed to be acquired. The building at 2954 Perkins has a modern edition that may be affected by acquisition of ROW and require removal. This modern porch is not considered to be part of the historic materials nor does it have historic integrity. The project avoids impacts to the historic building. See **Figures 10, 11**, and **12** for maps of these properties showing apparent ROW in relation to the structures.

FIGURE 10
2954 PERKINS *DE MINIMIS* IMPACT

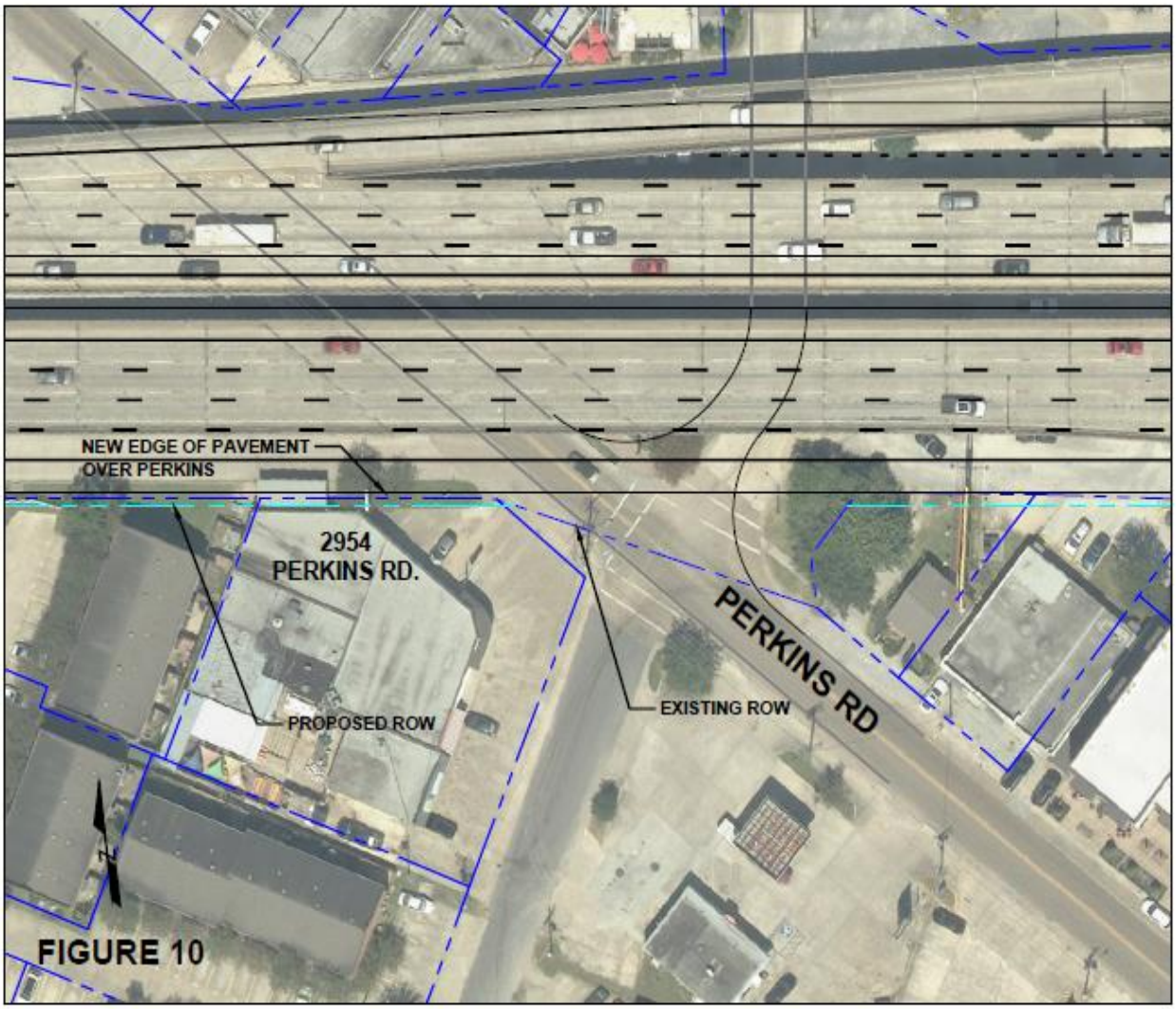


FIGURE 11
1807 GEORGIA AND 1855 KENTUCKY *DE MINIMIS* IMPACT

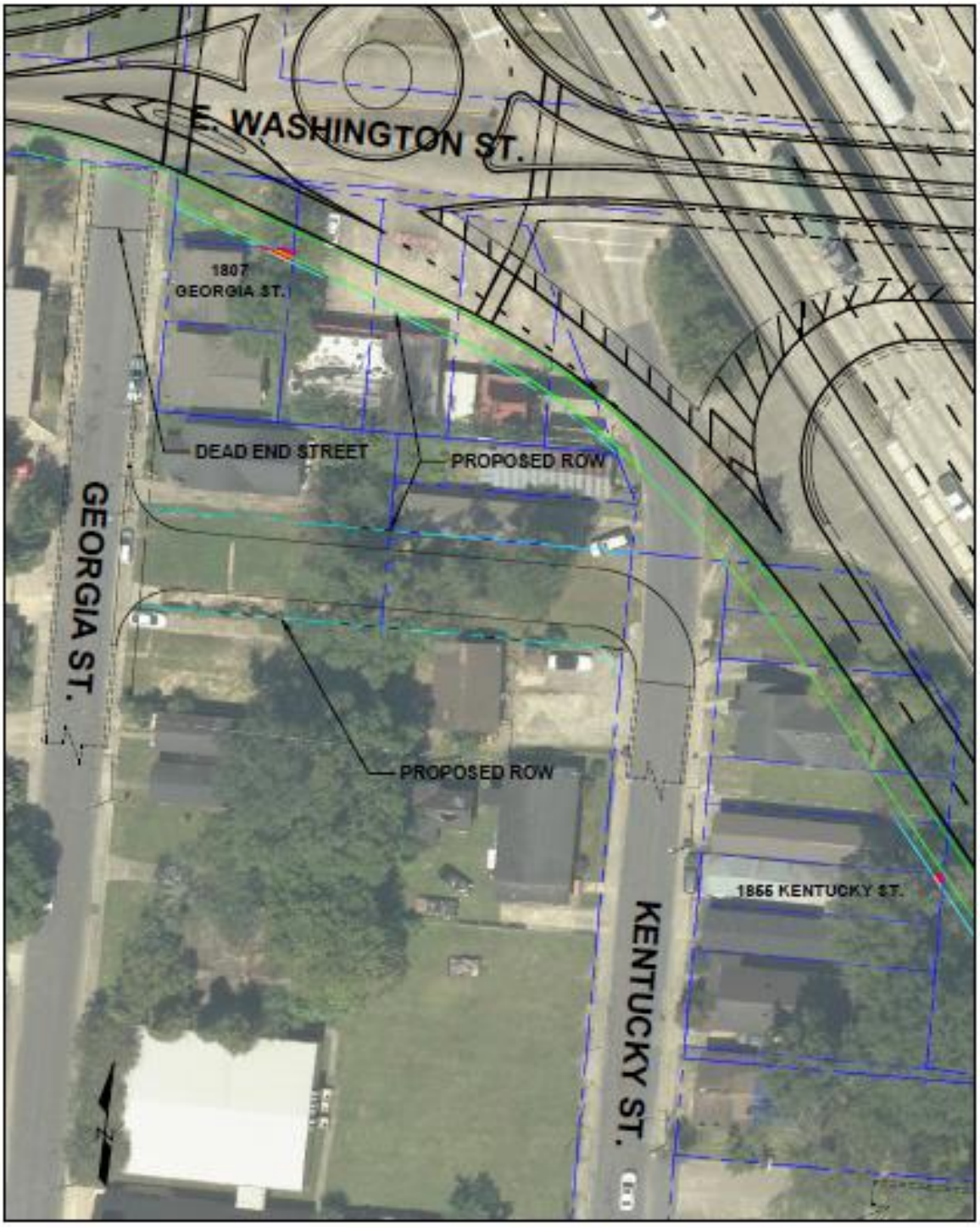
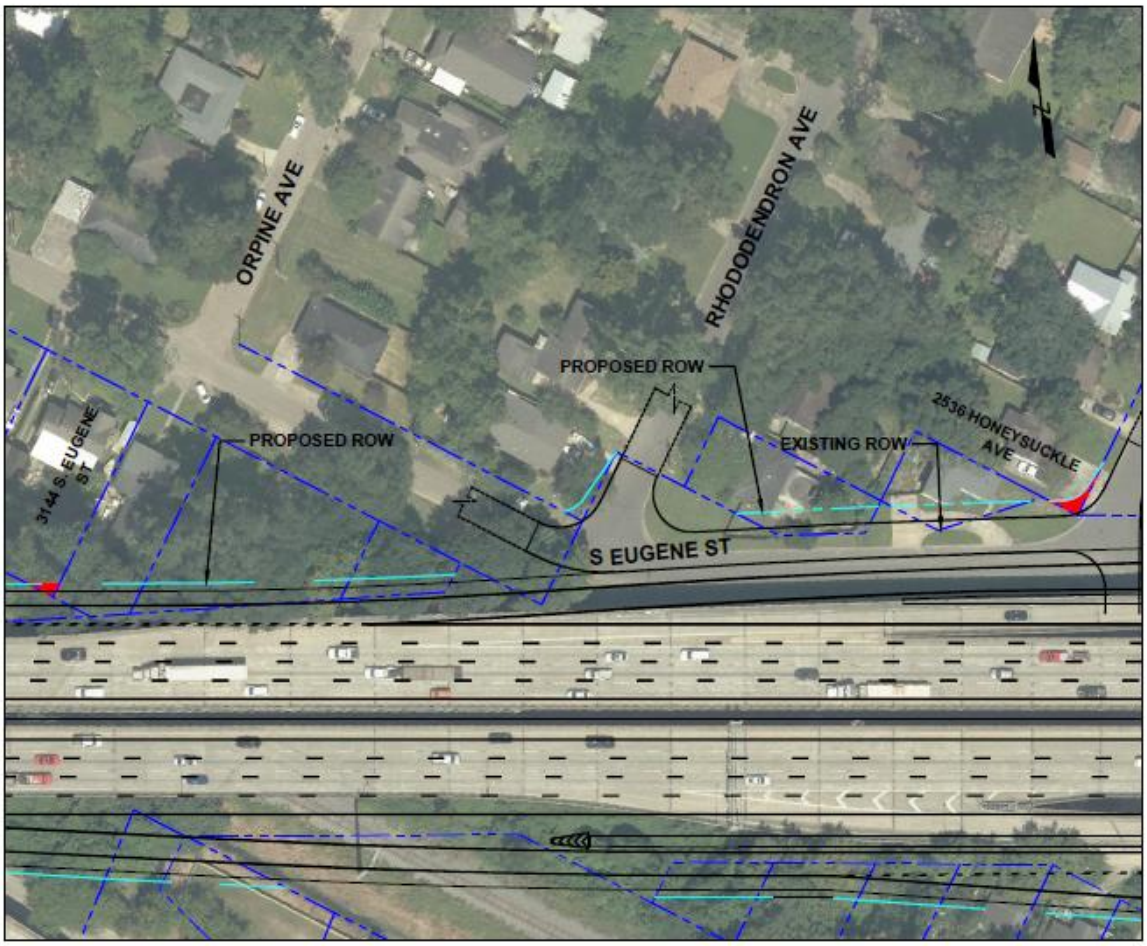


FIGURE 12
3144 S. EUGENE AND 2536 HONEYSUCKLE *DE MINIMIS* IMPACT

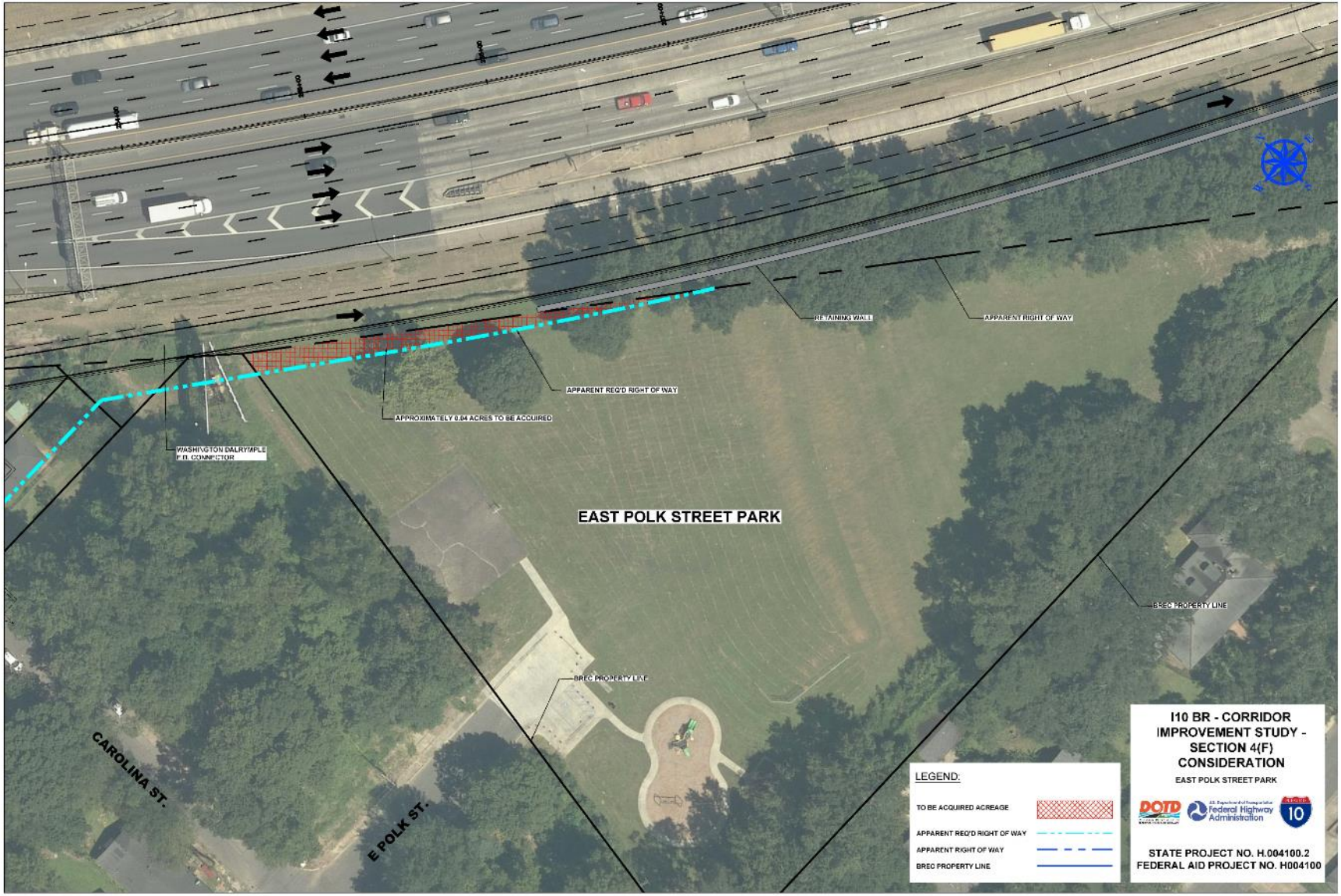


Two recreation areas are affected by the proposed action, East Polk Street Park and the trail around the City Park Lake. The impacts to these resources are discussed below.

The Preferred Alternative includes a new interchange that combines Washington/Dalrymple into one interchange. As proposed, this interchange will affect 0.04 acres of green space within East Polk Street Park adjacent to the existing I-10 ROW (**Figure 13**). All efforts were made to minimize the amount of additional ROW required; however, the new ramps would not meet the design criteria required without affecting this small portion of the park property.

The proposed impact is minimal in scope, linear in nature, and does not adversely affect the use of the property as a park. As mitigation measures, LA DOTD has committed to assist BREC in establishing an internal trail that will

FIGURE 13
EAST POLK STREET PARK ROW IMPACT



connect with one of the project's enhancement measures, a multiuse trail from Expressway Park to Dalrymple (greenway trail) within LA DOTD's ROW, as well as in acquiring additional landscaping to restore the buffer that trees in the existing ROW currently provide. The proposed new greenway trail enhancement project would create a dedicated linkage between the Expressway Park, East Polk Street Park, and the bike trails and boat launch along the University/City Park Lakes as well as the Knock Knock Children's Museum located on the opposite side of the I-10 ramps. A barrier will be included in the trail design to prevent traffic from crossing into the sidewalk/trail.

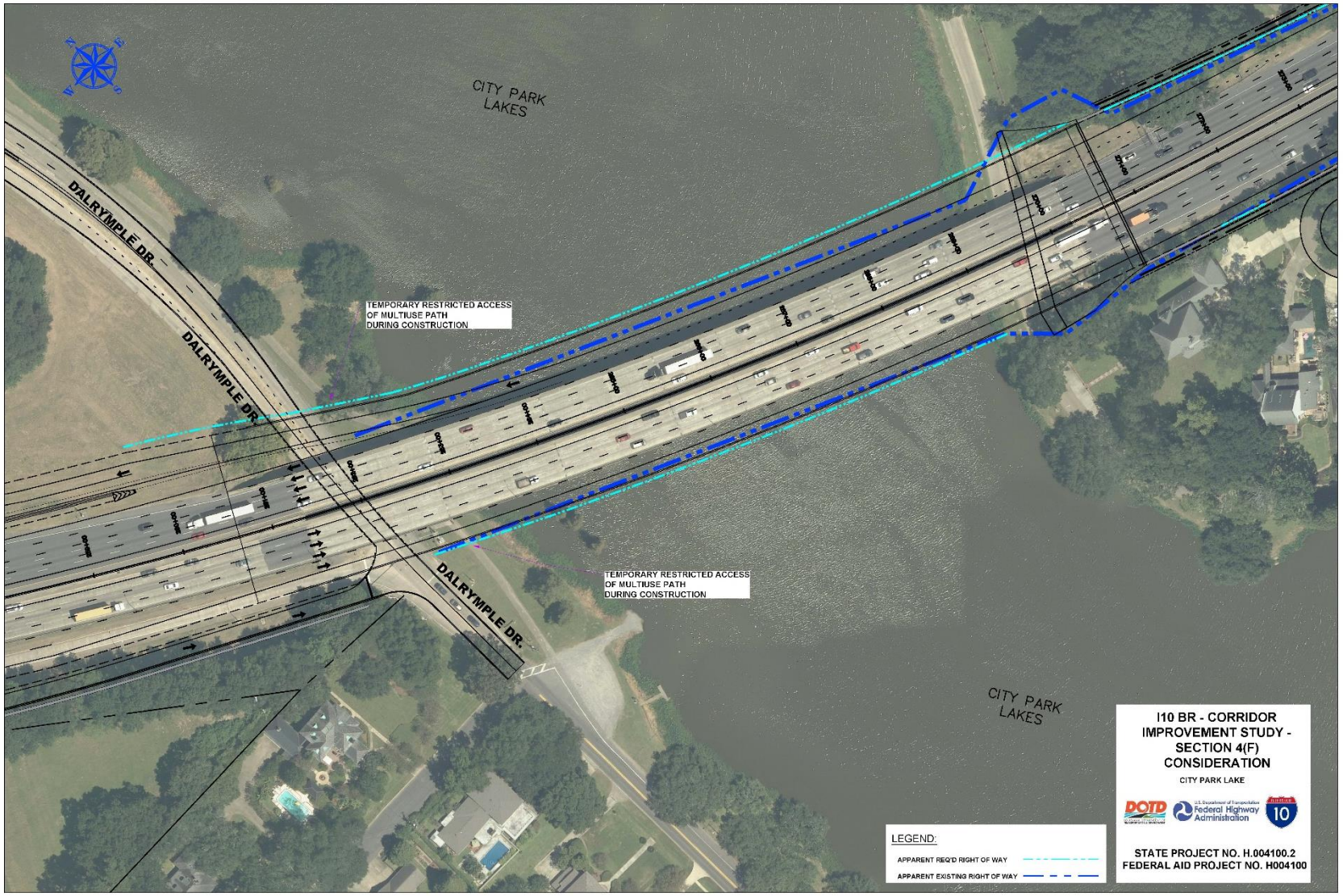
Due to the size and location of the impact, the Preferred Alternative qualifies as a *de minimis* impact under Section 4(f). A *de minimis* impact is an impact that results in no adverse effect to the activities, features, or attributes qualifying a park or recreation area for protections under Section 4(f) after accounting for avoidance, minimization, mitigation, and enhancement measures. BREC provided concurrence with the *de minimis* determination.

The Preferred Alternative also involves replacing the I-10 bridges over City Park Lake. There is a trail that crosses under I-10 adjacent to Dalrymple and East Lakeshore Drive that is utilized by pedestrians and cyclists (**Figure 14**).

Impact to the City Park Lake Trail will be in the form of the temporary closure of the trail to pedestrians and cyclists for varying durations during the construction of the new City Park Lake Bridge. Approximately 0.02 acres of the trail will be acquired as new ROW, however, no impact to the trail will result. There will be times during construction when it will not be safe to pass under the structure, such as during removal of existing bridge sections, installation of beams, and other overhead construction activities. These circumstances will require closing the portion of the trail passing underneath I-10 until it is determined safe to pass under the structure. Construction is proposed to be expeditious, which will minimize trail closure periods.

Due to the short duration and lack of permanency of the impact, the impact qualifies as a *de minimis* impact under Section 4(f). The City Parish concurred with the *de minimis* finding.

FIGURE 14
CITY PARK LAKE TRAIL AT DALRYMPLE AND EAST LAKESHORE



3.13 Geology

3.13.1 Existing Environment

According to the US Department of Agriculture's (USDA) *Soil Survey of Pointe Coupee and West Baton Rouge Parishes,* West Baton Rouge Parish is in south-central Louisiana entirely within the Mississippi River alluvial plain. The highest elevations in the parish are in the northern most reaches and are as high as 160 feet above mean sea level (MSL), while the southern areas of the parish in the Atchafalaya floodway are below MSL by as much as 20 feet.

According to the USDA's *Soil Survey of East Baton Rouge Parish,* East Baton Rouge Parish lies in southeastern Louisiana and has three major physiographic features: the Mississippi River flood plain, the Prairie formation, and the Montgomery formation. The parish's elevation is highest in the northwestern part of the parish (140 feet above MSL) with most of parish located around 25 to 60 feet above MSL.

3.13.2 Environmental Consequences

The No-Build Alternative would involve no disturbance of existing soils or the topographic character of the project study area.

The Preferred Alternative will involve replacement of elevated sections of I-10. Existing foundations will require removal and new foundations will be installed. No adverse impact to geological resources is anticipated; the area of construction has been previously impacted and new foundations will be located at similar depths below ground surface.

3.14 Farmland

3.14.1 Existing Environment

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is regulated under the Farmland Protection Policy Act (FPPA). Correspondence with the USDA's Natural Resource Conservation Service (NRCS) exempted the project from FPPA because the construction area is considered urban land and under FPPA, "Farmland subject to requirements can be forest land, pasture land, cropland, or other land, but not water or urban built-up land."

3.14.2 Environmental Consequences

The No-Build Alternative would involve no disturbance of existing soils, the topographic character of the project study area, or prime farmland.

According to the USDA guidance, federal agencies involved in projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will need to submit Form AD-1006 or CPA-106 Farmland Conversion Impact Rating. A request was submitted to the NRCS, and in a response dated March 14, 2017, the NRCS determined that the project was exempt from FPPA regulations (**Appendix C**).

3.15 Mineral Resources

Mineral resources information for the project study area was obtained by researching the LDNR's SONRIS database and USGS's publicly available data. Salt is listed as a mineral resource in West Baton Rouge/Iberville Parishes, while sulfur (oil) and construction sand and gravel are listed as mineral resources in East Baton Rouge Parish.

Active mineral leases in the project study area were researched through the State Mineral and Energy Board of the State of Louisiana, the entity that issues leases for exploring, prospecting, and/or drilling for and producing oil, gas, and any other liquid or gaseous minerals in solution and produced with oil and gas. Lease terms exclude free sulfur, potash, lignite, sale, and other solid minerals. There are no active mineral leases, oil and gas fields or Seismic 3D permits in the project study area.

3.16 Visual Environment

3.16.1 Existing Environment

The visual environment of the project study area primarily consists of commercial and industrial uses intersperse with agricultural land in West Baton Rouge Parish and predominately urban landscape in East Baton Rouge Parish. The areas in closest proximity to the parks in East Baton Rouge Parish have green space, lakes, and other urban park views not shared by the entire project route.

3.16.2 Environmental Consequences and Mitigation

The No-Build Alternative would have no impact on existing views and any aesthetic characteristics of the project study area.

The Preferred Alternative will result in the widening and replacement of the existing bridges over the City Park Lake, replacement of the

Nairn bridge, a new flyover ramp at College, installation of sound barriers, and widening of I-10 through most of the project area, except the Mississippi River Bridge. Potential visual impacts of each of these project elements are outlined below.

The bridge replacements over the City Park Lake and the Nairn overpass will result in new “signature” bridges. The concept drawings for the replacement structures were shown at the public meetings and received positive feedback. These structures will be more aesthetic that the bridges that currently exist in each location.

It is unlikely that the new flyover ramp for College will result in an adverse visual impact for residences located on the north side of I-10 in Bocage/Jefferson Heights. Based off conceptual layouts using as-built drawing data, the dedicated College flyover is four feet lower than the existing I-12 westbound flyover to I-10 eastbound at I-10 and at approximately the same height of the existing flyover at I-12. If the residences do not currently see the existing flyover, they should not see the proposed flyover. Comments received during the public meetings indicate that the residents of this area are concerned about the appearance of the flyover and have requested that it have an aesthetic and noise dampening design. LA DOTD is considering this request and has indicated the sound barriers/noise barriers on the proposed flyover would have to be funded through a special state appropriation since they would not qualify for federal funding.

Noise barriers are proposed in multiple locations where none presently exist, and some noise barriers will be relocated to accommodate the widening. Installation of noise barriers will effectively block the view of I-10 for some residential areas, for others, the barriers will be on elevated portions of I-10 and they will continue to have I-10 structure in their viewshed, but no traffic visuals. The effect of new noise barriers on existing viewsheds may be positive for some, negative for others. The presence of barriers may result in some yards feeling smaller, as the barriers are solid and I-10 will no longer be visible. The reduction in interstate noise and privacy provided by noise barriers may be appealing to some. Since there are noise barriers on I-10, designs for new barriers will be required to be similar enough in nature for aesthetics.

Widening of I-10 will result in minimal effect on the visual environment, as I-10 currently exists. Those that live in proximity to the interstate such that they see it in their viewshed now, will continue to do so, except where noise barriers are installed.

3.17 Unique and Environmentally Sensitive Areas

3.17.1 Existing Environment

The LA DOTD Office of Engineering in the Engineering Directives and Standards Manual (EDSM; No: I.1.1.21) Treatment of Significant Trees in LA DOTD Right-of-Way defines, for the purposes of this policy, a significant tree as a Live Oak, Red Oak, White Oak, Magnolia, or Cypress that is considered aesthetically important, 18-inches or greater in diameter at breast height (4-6 feet above the ground), and having a form that separates it from the surrounding vegetation or is considered historic. Additionally, significant trees must be in good health and not in a declining condition.

There are significant live oak trees located throughout the project corridor and within the existing ROW for I-10 in West and East Baton Rouge Parishes.

Additionally, Baton Rouge Green has trees planted along the interstate, concentrated around interchanges, including ramp terminals. These trees not only provide for beautification of the I-10 corridor; they also provide environmental benefits including, but not limited to storm water filtration and retention, and air quality improvements.

Figures 15a and **15b** demonstrate the location of significant trees and those planted and maintained by Baton Rouge Green.

FIGURE 15a
SIGNIFICANT AND BATON ROUGE GREEN TREES
(WEST BATON ROUGE TO DOWNTOWN)

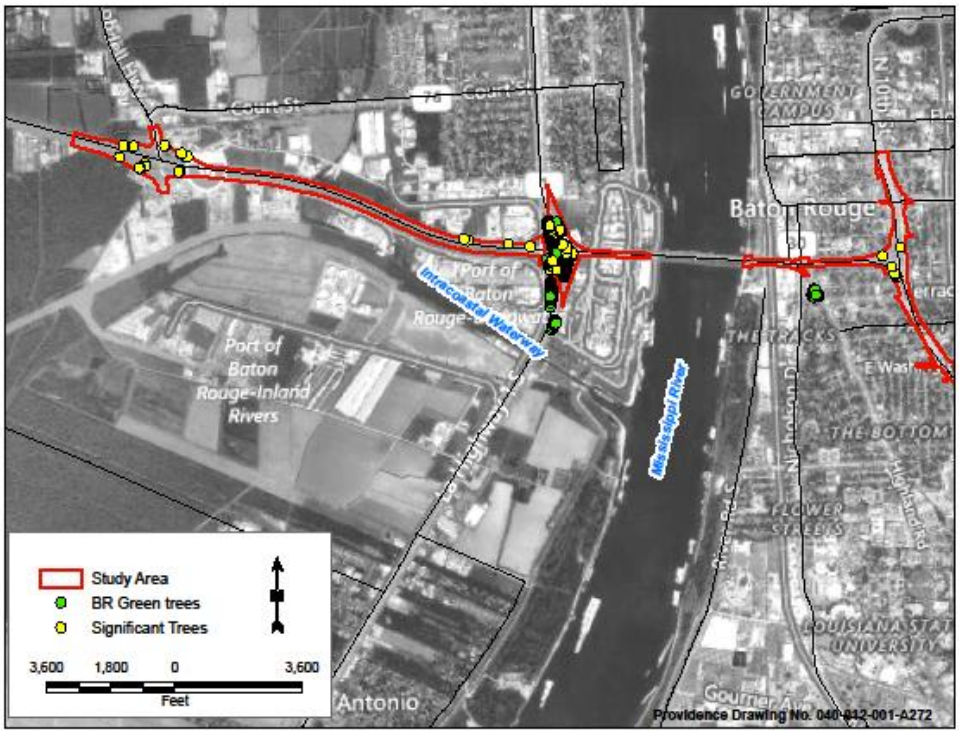
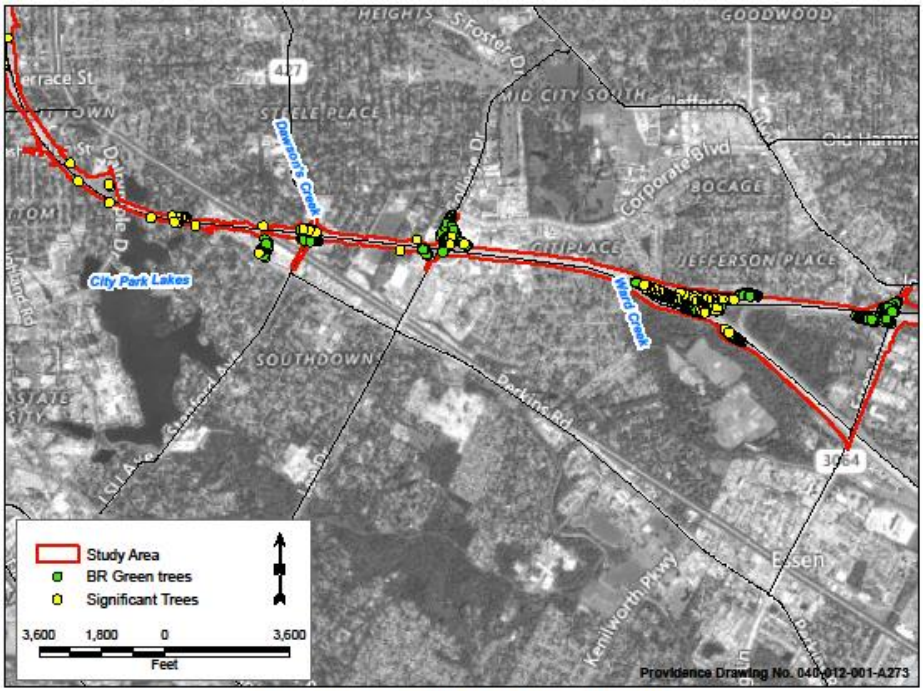


FIGURE 15b
SIGNIFICANT AND BATON ROUGE GREEN TREES
(TERRACE STREET TO ESSEN LANE)



No other Unique and/or Environmentally Sensitive Areas exist near the project study area.

3.17.2 Environmental Consequences and Mitigation

The No-Build Alternative is not expected to impact unique or environmentally sensitive areas.

Areas with significant trees were identified in the project area for the Preferred Alternative**. Figures 15a** and **b** shows the location of significant trees as well as trees planted by Baton Rouge Green in the project corridor. During the design stage, landscape architectural staff and District Roadside Development Coordinators will be consulted concerning ROW to identify the location of all significant trees. The design section will indicate the location of these trees on the final plans and implement a context sensitive design to accommodate these trees, if any, as practical.

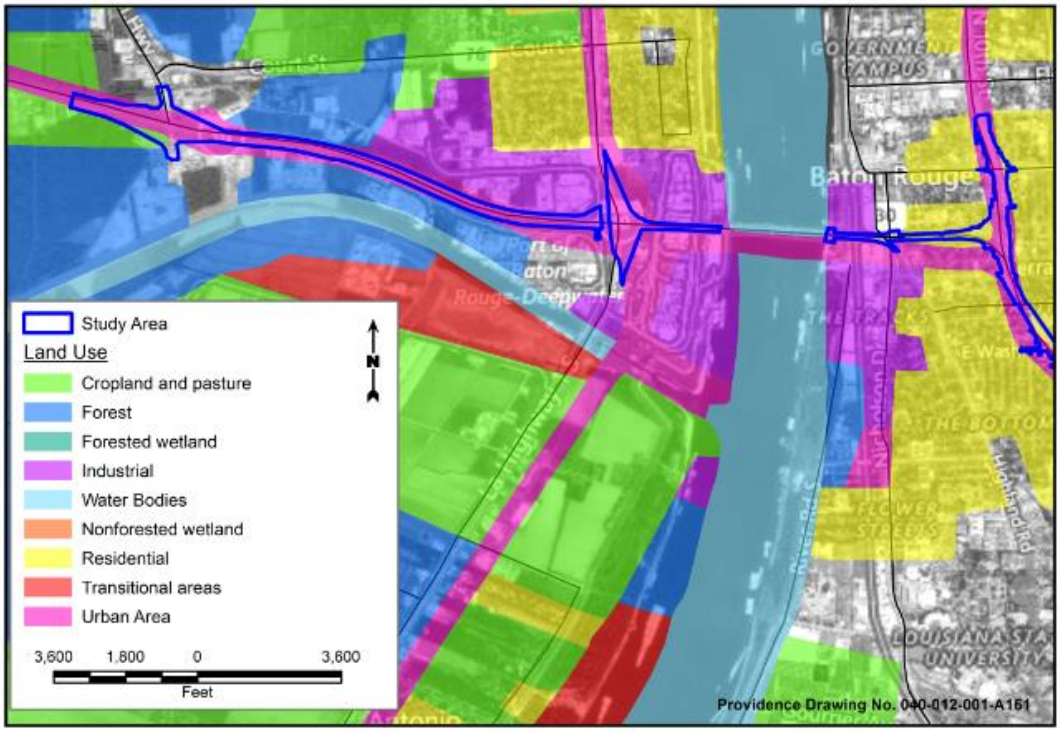
3.18 Land Use and Development Trends

3.18.1 Existing Environment

West Baton Rouge Parish

Land use in and adjacent to the project study area in West Baton Rouge Parish is predominately commercial and industrial, interspersed with agricultural (**Figure 16a**). Zoning and development trends support these developments. While there is only one park in proximity to the exiting I-10 ROW, Rivault Park, there is a movement to establish bike friendly levee trails along the Mississippi River in West Baton Rouge Parish.

FIGURE 16a
WEST BATON ROUGE PARISH LAND USE

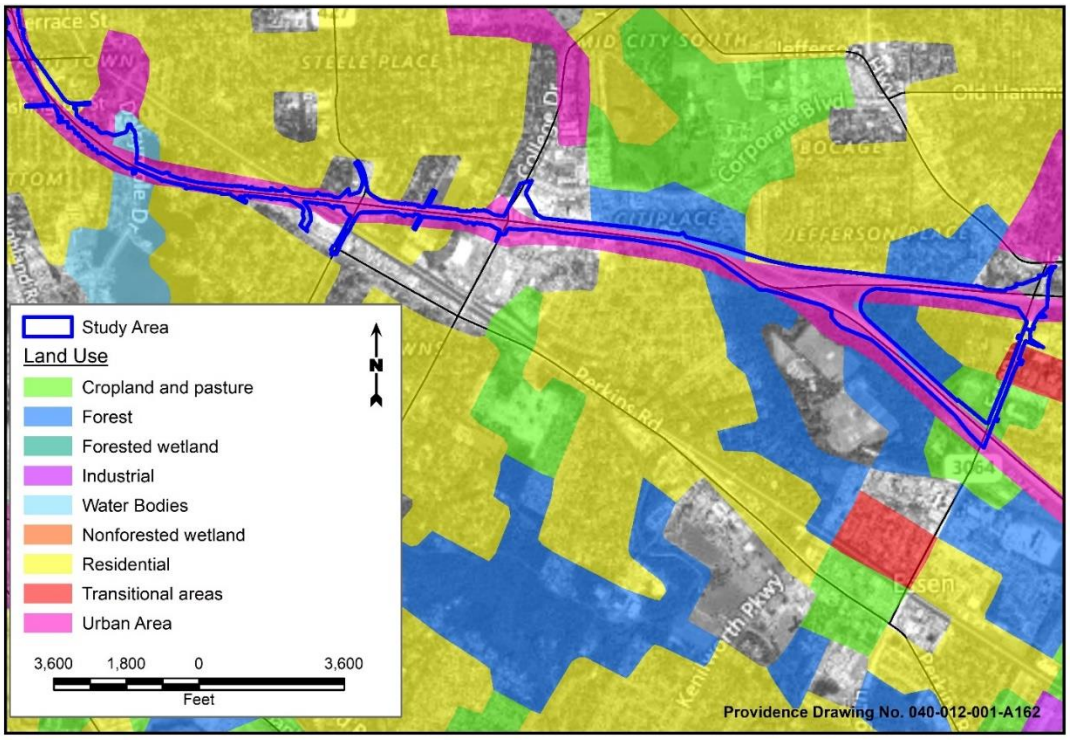


PlanWEST (2011) is West Baton Rouge Parish's comprehensive plan to guide growth while preserving the parish's agricultural and ecological landscape and rural lifestyle. This plan supports the development of an integrated bike and pedestrian network, as well as focused areas for growth, and transportation improvements.

East Baton Rouge Parish

Land use in and adjacent to the project study area in East Baton Rouge Parish is predominately residential and commercial (**Figure 15b**). Little of the property in the project area that is not existing I-10 ROW remains undeveloped. Multiple parks, including Expressway Park, City/Brooks Community Park, East Polk Street Park, and Nairn Park are in or adjacent to the existing I-10 ROW.

FIGURE 16b
EAST BATON ROUGE PARISH LAND USE



Land Use Land Cover Data obtained from the USGS data set and modified based on aerial investigations. Base map comprised of ESRI World Imagery Maps dated June 2013.

There are two listed historic districts, two proposed historic districts, and two cultural districts that are adjacent to or crossed by I-10. BTHD (NRHP #83000500) is located north of I-10 in the vicinity of the I-10/I-110 split. ERSHD (NRHP #100003248) is located to the east of I-10 between Terrace and Convention Streets.

The Louisiana Cultural Districts Program was created by Act 298 of the 2007 Regular Session of Legislature to spark community revitalization based on cultural activity through tax incentives (LOCD, 2016). While Cultural Districts are not afforded any protections through the National Historic Preservation Act of 1966, they are distinct communities that warrant design considerations. The two cultural districts are the Perkins Road Arts and Old South Baton Rouge Districts.

Several master plans have been or are in the process of development at the time of this EA that incorporate portions of the project area. The East Baton Rouge Parish Pedestrian and Bicycle Master Plan is under development and will ultimately recommend a city-wide plan to accommodate safe facilities for pedestrians and cyclists. The Baton Rouge Lakes Master Plan focus is on "creating a world class cultural landscape that attracts Baton Rouge residents and visitors alike" (Baton Rouge Area Foundation (BRAF), 2016). The plan details water quality improvements, ecological restoration, and enhancements/amenities to improve recreation around the lakes. Plan Baton Rouge Phase II is the latest update to the Baton Rouge Master Plan focusing on revitalizing downtown Baton Rouge, including strategies for incentivizing development, improving mobility and access, more parks and plantings, and new assets to bring people downtown. This plan spawned the Downtown Greenway, a pedestrian/bike corridor designed to link inner city neighborhoods to parks, businesses, and other attractions. A Master Plan for the Baton Rouge Health District (BRAF, 2015) details strategies to improve the roadway network along with other concepts for the betterment of the people of East Baton Rouge Parish.

3.18.2 Environmental Consequences

The No-Build Alternative would not change the present development pattern of land use categories in the project study area, neither would it provide support or connecting facilities for bike and pedestrian improvements in concert with the following master plans:

- PlanWEST
- East Baton Rouge Parish Pedestrian and Bicycle Master Plan
- Baton Rouge Lakes Master Plan
- Baton Rouge Phase II/Baton Rouge Master Plan
- Master Plan for the Baton Rouge Health District

Construction of the Build Alternative will be accomplished mostly within existing ROW. The land use category for the existing ROW and apparent acquired ROW is Urban Land; no change in land use category would be expected. This information is according to the USGS land use data presented in **Figures 16a** and **b**.

3.19 Community Facilities and Services

3.19.1 Existing Environment

Schools and Libraries

Four schools and no libraries are in or adjacent to the project study area. These schools include Baton Rouge Christian Bible College, St. Francis Xavier Catholic School, McKinley Middle Magnet, and Baton Rouge Foreign Language Academic Immersion Magnet (FLAIM). The closest library is the East Baton Rouge Public Library's Carver Branch, located off Terrace Avenue to the west of the project.

Houses of Worship and Cemeteries

Project area churches include:

- New St. Luke Baptist
- Liberty Chapel Baptist
- St. Francis Xavier Catholic
- Progressive Baptist
- New Prospect Missionary Baptist
- Pine Prairie Church of Christ
- Fairview Baptist
- Neely United Methodist
- Ebenezer Baptist

Police Stations, Fire Stations, and Hospitals

No police or fire stations or hospitals are in the project study area.

Public Transportation

Capital Area Transit System or CATS, operates 29 bus lines servicing the Baton Rouge area throughout East Baton Rouge Parish. While none of the routes utilize I-10, routes do cross under I-10 at Terrace, Acadian, College, and Essen Lane.

West Baton Rouge Parish does not support an area wide transit system. There are transit services available to seniors and persons with disabilities. As these services are demand driven, there are no designated routes.

Other Facilities

Dr. Leo S. Butler Community Center and Baranco-Clark YMCA are adjacent to the ROW for the proposed project in East Baton Rouge Parish.

3.19.2 Environmental Consequences

Neither the No-Build Alternative nor the Preferred Alternative will directly affect any community facility structures. Several churches, the Dr. Leo S. Butler Community Center, Baranco-Clark YMCA, and four schools including the Baton Rouge Christian Bible College, St. Francis Xavier Catholic School, McKinley Middle Magnet, and FLAIM are adjacent to the proposed apparent ROW.

Construction activities have the potential to temporarily affect travel patterns in the vicinity of the schools, churches and other community facilities. These impacts will be temporary in nature and alternative routes, as needed, will be provided.

3.20 Community Demographic

3.20.1 Existing Environment

The project study area falls between two parishes and 12 different census tracts, including: Tracts 14, 21, 22, 23, 25, 26.01, 27, and 38.01 in East Baton Rouge Parish and Tracts 201, 202, 203, and 204 in West Baton Rouge Parish. Demographic data for these tracts relating to the project study area's employment status, industry, transportation methods, *etc*. was obtained from the United States Census Bureau (USCB), 2006-2010 American Community Survey (ACS) 5-Year Estimates. **Figures 17a** and **17b** and **Table 3-14** provides details on the minority population present in the census tracts that comprise the buffered project study area. The data was available on the USCB's American Fact Finder (AFF) website and is the most recent data currently available for the project study area. Demographic data for these tracts relating to housing units, educational attainment, age groups, language spoken, and poverty data was obtained from the ACS 5-Year Estimates for 2008-2012 (see **Tables 3-15** and **3-16**). Poverty designated populations in the project study area are shown on **Figures 18a** and **18b**. Population numbers in the tables do not match exactly as the tables are comprised of different data sets, as indicated in the notes.

In accordance with the FHWA Order 6640.23A and the United States Department of Transportation (US DOT) Order 5610.2(a), a minority means a person who is African American, Asian American, American Indian/Alaskan Native, Native Hawaiian/Other Pacific Islander, or Hispanic (regardless of race). Therefore, the total population minus

the "white alone" population was used to determine the minority population. According to the census tract data, five census tracts support minority and/or low-income populations, including Tracts 21, 22, 25, and 27 in East Baton Rouge Parish, and Tract 201 in West Baton Rouge Parish.

FIGURE 17a
WEST BATON ROUGE PARISH MINORITY POPULATION

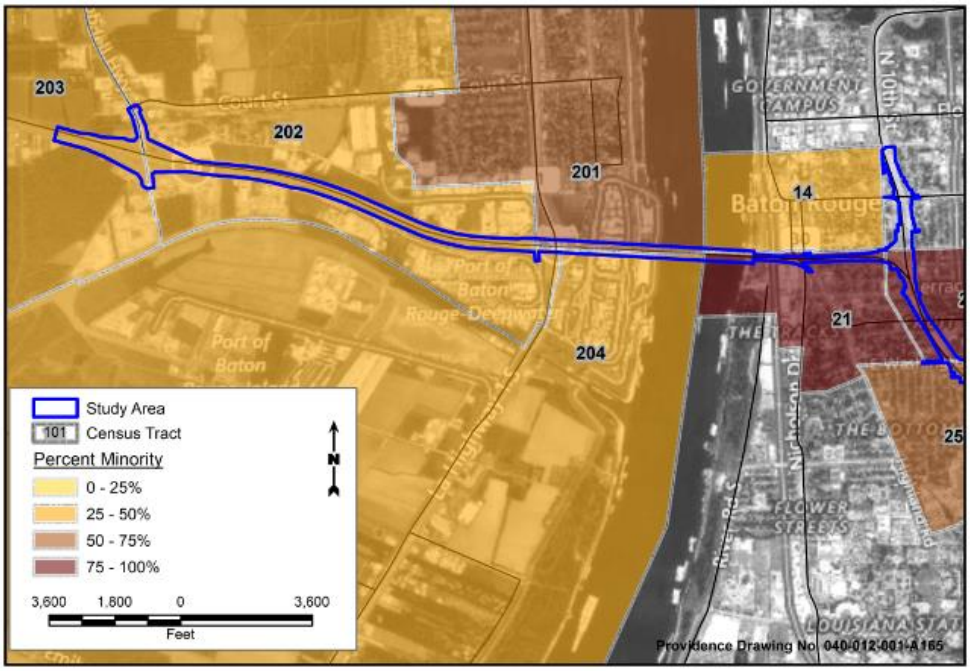


FIGURE 17b
EAST BATON ROUGE PARISH MINORITY POPULATION

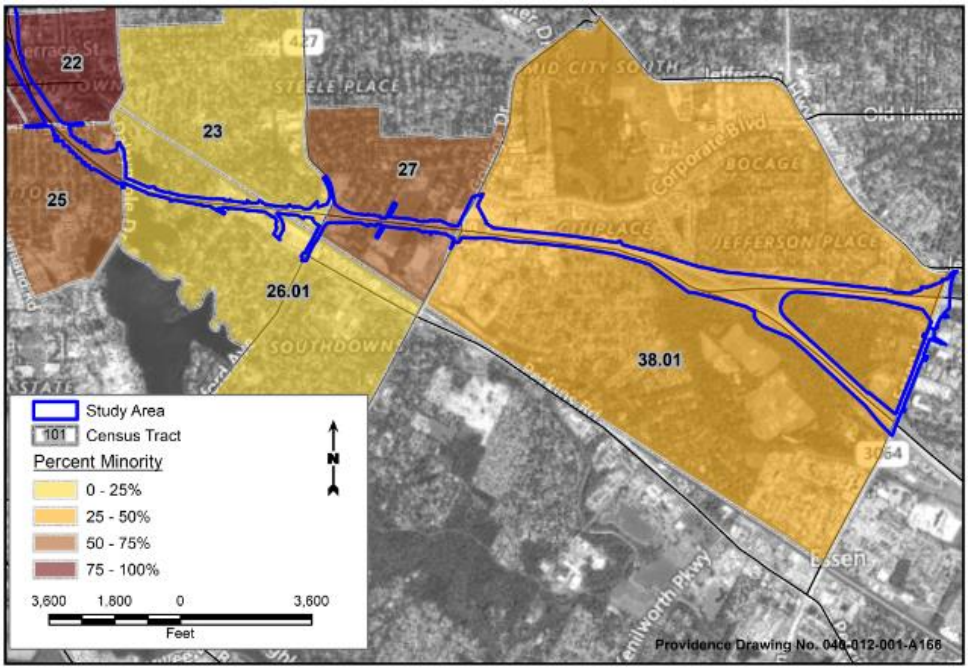


TABLE 3-14
POPULATION TABLE FOR CENSUS TRACTS

Census Tracts within the Project Area	Subject	Total Population (all races)	White[1]	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or More Races	Hispanic[2]	Minority Calculation[3]
EBR – Tract 14	Number	568	308	234	3	10	0	2	11	5	260
	Percent	-	54.2%	41.2%	0.5%	1.8%	0.0%	0.4%	1.9%	0.9%	45.8%
EBR – Tract 21	Number	2,004	109	1,874	0	5	0	7	9	15	1,895
	Percent	-	5.4%	93.5%	0.0%	0.2%	0.0%	0.3%	0.4%	0.7%	94.6%
EBR – Tract 22	Number	1,745	186	1,507	4	19	1	4	24	13	1,559
	Percent	-	10.7%	86.4%	0.2%	1.1%	0.1%	0.2%	1.4%	0.7%	89.3%
EBR – Tract 23	Number	2,776	2,616	92	2	4	0	25	27	83	160
	Percent	-	94.2%	3.3%	0.1%	0.1%	0.0%	0.9%	1.0%	3.0%	5.8%
EBR – Tract 25	Number	3,504	1,309	1,992	19	109	0	22	53	68	2,195
	Percent	-	37.4%	56.8%	0.5%	3.1%	0.0%	0.6%	1.5%	1.9%	62.6%
EBR – Tract 26.01	Number	3,822	3,509	153	5	64	3	24	64	108	313
	Percent	-	91.8%	4.0%	0.1%	1.7%	0.1%	0.6%	1.7%	2.8%	8.2%
EBR – Tract 27	Number	1,621	517	1,066	4	5	4	2	23	28	1,104
	Percent	-	31.9%	65.8%	0.2%	0.3%	0.2%	0.1%	1.4%	1.7%	68.1%
EBR – Tract 38.01	Number	7,574	4,983	2,056	15	284	4	138	94	363	2,591
	Percent	-	65.8%	27.1%	0.2%	3.7%	0.1%	1.8%	1.2%	4.8%	34.2%
WBR – Tract 201	Number	4,684	2,064	2,585	7	1	0	9	18	45	2,620
	Percent	-	44.1%	55.2%	0.1%	0.0%	0.0%	0.2%	0.4%	1.0%	55.9%
WBR – Tract 202	Number	3,078	1,769	1,193	10	21	1	26	58	93	1,309
	Percent	-	57.5%	38.8%	0.3%	0.7%	0.0%	0.8%	1.9%	3.0%	42.5%
WBR – Tract 203	Number	5,377	3,723	1,574	14	9	1	9	47	34	1,654
	Percent	-	69.2%	29.3%	0.3%	0.2%	0.0%	0.2%	0.9%	0.6%	30.8%
WBR – Tract 204	Number	8,462	6,005	2,314	13	9	3	70	48	141	2,457
	Percent	-	71.0%	27.3%	0.2%	0.1%	0.0%	0.8%	0.6%	1.7%	29.0%

NOTES:
1. All populations are provided the qualifying term “alone”, such as “white alone”, black or African American alone” in the USCB tables.
2. Since all Hispanics regardless of race are considered a minority, the population with Hispanic ethnicity is identified in this column, and all the other race categories do not include Hispanic ethnicity.
3. In accordance with FHWA Order 6640.23A and DOT Order 5610.2, a minority means a person who is Black, Asian American, American Indian/Alaskan Native, or Hispanic (regardless of race). To determine the number of minorities, the total population minus the "white “ population was determined.

Source: USCB, 2010 Census Summary File 1 (DP-1) 100-Percent Data

TABLE 3-15
POVERTY STATUS

Census Tracts within the Project Area	Subject	Population for whom Poverty Status is Determined [1]
EBR – Tract 14	Total Population Status Determined	551
	Below Poverty Level	111
	Percent Below Poverty Level	20.1%
EBR – Tract 21	Total Population Status Determined	1,746
	Below Poverty Level	824
	Percent Below Poverty Level	47.2%
EBR – Tract 22	Total Population Status Determined	1,407
	Below Poverty Level	703
	Percent Below Poverty Level	50.0%
EBR – Tract 23	Total Population Status Determined	2,850
	Below Poverty Level	140
	Percent Below Poverty Level	4.9%
EBR – Tract 25	Total Population Status Determined	3,550
	Below Poverty Level	1,699
	Percent Below Poverty Level	47.9%
EBR – Tract 26.01	Total Population Status Determined	3,298
	Below Poverty Level	506
	Percent Below Poverty Level	15.3%
EBR – Tract 27	Total Population Status Determined	1,582
	Below Poverty Level	317
	Percent Below Poverty Level	20.0%
EBR – Tract 38.01	Total Population Status Determined	6,767
	Below Poverty Level	893
	Percent Below Poverty Level	13.2%
WBR – Tract 201	Total Population Status Determined	4,225
	Below Poverty Level	1,074
	Percent Below Poverty Level	25.4%
WBR – Tract 202	Total Population Status Determined	2,525
	Below Poverty Level	757
	Percent Below Poverty Level	30.0%
WBR – Tract 203	Total Population Status Determined	5,632
	Below Poverty Level	760
	Percent Below Poverty Level	13.5%
WBR – Tract 204	Total Population Status Determined	9,493
	Below Poverty Level	612
	Percent Below Poverty Level	6.4%

NOTES:

1. An estimated margin of error was given for each category and is available on the AFF website.

Source: USCB, 2006-2010 ACS 5-Year Estimates Table S1701: Poverty Status in the Past 12 Months

TABLE 3-16
DEMOGRAPHIC DATA

Census Tracts within the Project Study Area	EBR - Tract 14		EBR - Tract 21		EBR - Tract 22		EBR - Tract 23		EBR - Tract 25		EBR - Tract 26.01		EBR - Tract 27		EBR - Tract 38.01		WBR - Tract 201		WBR - Tract 202		WBR - Tract 203		WBR - Tract 204		Study Area	
	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent
Housing Data																										
Total housing units	307	-	717	-	792	-	1,396	-	1,791	-	1,842	-	770	-	3,699	-	1,882	-	1,375	-	2,504	-	3,682	-	20,757	-
Occupancy status																										
Occupied housing units	214	69.7%	585	81.6%	503	63.5%	1,219	87.3%	1,325	74.0%	1,672	90.8%	624	81.0%	3,011	81.4%	1,732	92.0%	1,220	88.7%	2,218	88.6%	3,528	95.8%	17,851	86.0%
Vacant housing units	93	30.3%	132	18.4%	289	36.5%	177	12.7%	466	26.0%	170	9.2%	146	19.0%	688	18.6%	150	8.0%	155	11.3%	286	11.4%	154	4.2%	2,906	14.0%
Tenure																										
Occupied housing units	214	-	585	-	503	-	1,219	-	1,325	-	1,672	-	624	-	3,011	-	1,732	-	1,220	-	2,218	-	3,528	-	17,851	-
Owner occupied	115	53.7%	295	50.4%	298	59.2%	944	77.4%	479	36.2%	1,010	60.4%	372	59.6%	1,469	48.8%	1,154	66.6%	582	47.7%	1,740	78.4%	2,983	84.6%	11,441	64.1%
Renter occupied	99	46.3%	290	49.6%	205	40.8%	275	22.6%	846	63.8%	662	39.6%	252	40.4%	1,542	51.2%	578	33.4%	638	52.3%	478	21.6%	545	15.4%	6,410	35.9%
Educational Attainment																										
Population 25 years and over	448	-	1,145	-	934	-	1,991	-	2,078	-	2,485	-	1,317	-	4,160	-	3,039	-	1,906	-	3,309	-	5,093	-	27,905	-
Less than 9th grade	7	1.6%	92	8.0%	96	10.3%	8	0.4%	258	12.4%	38	1.5%	118	9.0%	96	2.3%	409	13.5%	227	11.9%	328	9.9%	262	5.1%	1,939	6.9%
9th to 12th grade, no diploma	55	12.3%	425	37.1%	224	24.0%	30	1.5%	365	17.6%	87	3.5%	249	18.9%	175	4.2%	563	18.5%	610	32.0%	584	17.6%	566	11.1%	3,933	14.1%
High school graduate (includes equivalency)	84	18.8%	242	21.1%	257	27.5%	190	9.5%	405	19.5%	184	7.4%	399	30.3%	350	8.4%	1,057	34.8%	579	30.4%	1,362	41.2%	2,424	47.6%	7,533	27.0%
Some college, no degree	116	25.9%	238	20.8%	198	21.2%	410	20.6%	369	17.8%	521	21.0%	281	21.3%	926	22.3%	515	16.9%	352	18.5%	570	17.2%	1,114	21.9%	5,610	20.1%
Associate's degree	0	0.0%	8	0.7%	16	1.7%	37	1.9%	75	3.6%	54	2.2%	23	1.7%	99	2.4%	77	2.5%	26	1.4%	120	3.6%	118	2.3%	653	2.3%
Bachelor's degree	120	26.8%	96	8.4%	87	9.3%	704	35.4%	283	13.6%	781	31.4%	178	13.5%	1,357	32.6%	291	9.6%	101	5.3%	245	7.4%	455	8.9%	4,698	16.8%
Graduate or professional degree	66	14.7%	44	3.8%	56	6.0%	612	30.7%	323	15.5%	820	33.0%	69	5.2%	1,157	27.8%	127	4.2%	11	0.6%	100	3.0%	154	3.0%	3,539	12.7%
Age Groups																										
Total Population	568	-	2,004	-	1,745	-	2,756	-	3,689	-	3,600	-	1,953	-	6,104	-	4,684	-	3,078	-	5,377	-	8,462	-	44,020	-
0-9 years	53	9.3%	500	25.0%	236	13.5%	272	9.9%	414	11.2%	382	10.6%	314	16.1%	508	8.3%	619	13.2%	444	14.4%	800	14.9%	1,293	15.3%	5,835	13.3%
10-19 years	42	7.4%	313	15.6%	282	16.2%	277	10.1%	519	14.1%	327	9.1%	291	14.9%	696	11.4%	703	15.0%	408	13.3%	891	16.6%	1,580	18.7%	6,329	14.4%
20-24 years	72	12.7%	167	8.3%	178	10.2%	217	7.9%	673	18.2%	402	11.2%	112	5.7%	711	11.6%	311	6.6%	330	10.7%	301	5.6%	527	6.2%	4,001	9.1%
25-44 years	249	43.8%	478	23.9%	442	25.3%	979	35.5%	1,022	27.7%	1,227	34.1%	486	24.9%	1,648	27.0%	1,228	26.2%	1,070	34.8%	1,655	30.8%	2,654	31.4%	13,138	29.8%
45-64 years	110	19.4%	312	15.6%	341	19.5%	672	24.4%	603	16.3%	742	20.6%	446	22.8%	1,555	25.5%	1,103	23.5%	604	19.6%	1,248	23.2%	1,735	20.5%	9,471	21.5%
65 years and over	42	7.4%	234	11.7%	266	15.2%	339	12.3%	458	12.4%	520	14.4%	304	15.6%	986	16.2%	720	15.4%	222	7.2%	482	9.0%	673	8.0%	5,246	11.9%
Language Spoken at Home																										
Population 5 years and over	577	-	1,901	-	1,475	-	2,580	-	3,454	-	3,401	-	1,783	-	5,898	-	4,383	-	2,849	-	4,971	-	7,883	-	41,155	-
English only	556	96.4%	1,895	99.7%	1,366	92.6%	2,432	94.3%	2,794	80.9%	3,174	93.3%	1,719	96.4%	5,477	92.9%	4,219	96.3%	2,656	93.2%	4,614	92.8%	7,517	95.4%	38,419	93.4%
Language other than English	21	3.6%	6	0.3%	109	7.4%	148	5.7%	660	19.1%	227	6.7%	64	3.6%	421	7.1%	164	3.7%	193	6.8%	357	7.2%	366	4.6%	2,736	6.6%

NOTES:
1. Although the ACS produces population demographic and housing unit estimates, for 2010, the 2010 Census provides the official counts of the population and housing units. For 2006 to 2009, the Population Estimates Program provides intercensal estimates of the population for the nation, states, and counties.
2. An estimated margin of error was given for each category and is available on the AFF website.

Sources: USCB, 2006-2010 ACS 5-Year Estimates Table DP-02 and DP-04; 2010 Census Summary File 1 (SF 1) 100-Percent Data, Tables QT-H1, QT-P1

FIGURE 18a
WEST BATON ROUGE PARISH US CENSUS POVERTY POPULATION

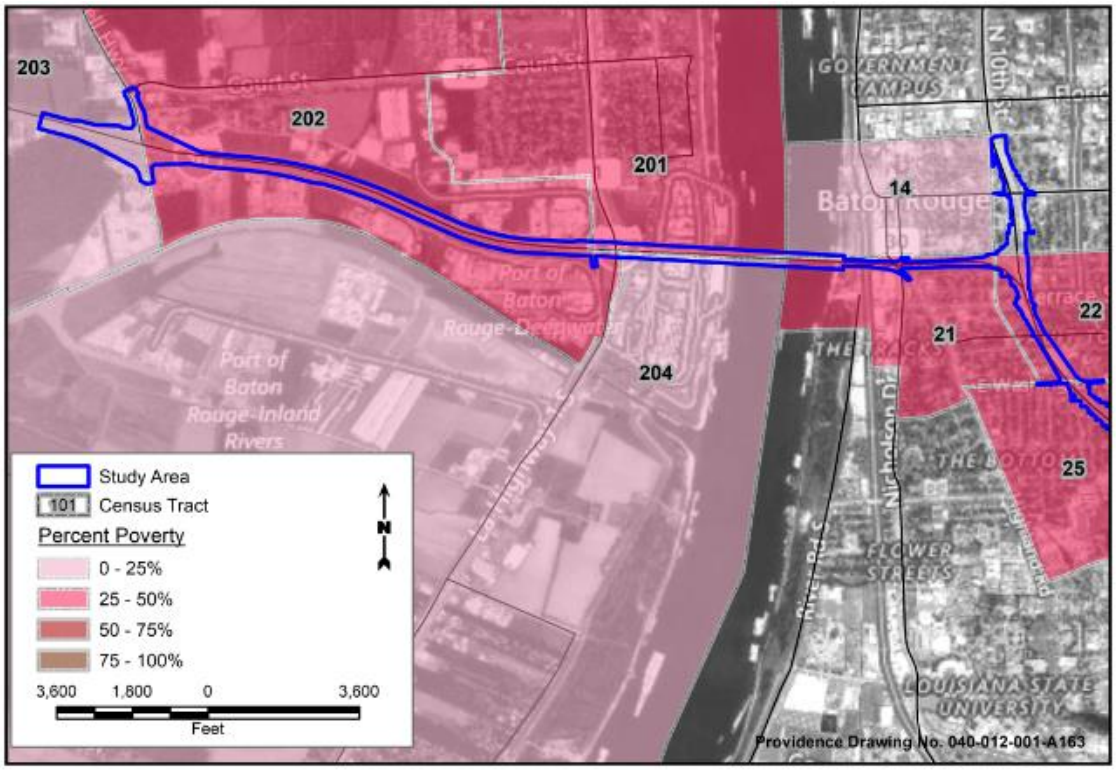
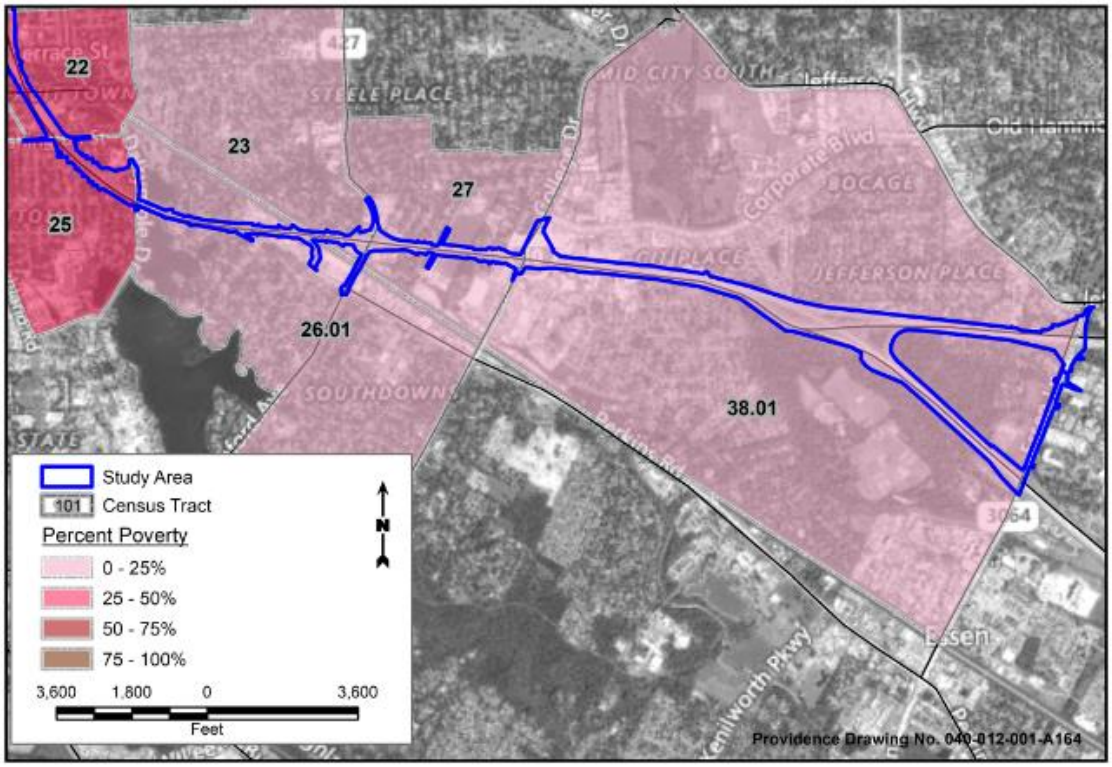


FIGURE 18b
EAST BATON ROUGE PARISH US CENSUS POVERTY POPULATION



3.20.2 Environmental Consequences and Mitigation

Relocations

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (the Uniform Act) provides important protections and assistance for people affected by federally funded projects. Relocation resources are available to all residential and business relocates without discrimination in compliance with Title VI of the Civil Rights Act of 1964. Assistance could be provided in the form of replacement housing, replacement buildings (for businesses), rental assistance, moving expenses, re-establishment expenses, and/or housing of last resort.

The No-Build Alternative would not result in the immediate acquisition of residences or businesses, in whole or in part. However, as the I-10 system through Baton Rouge continues to age, the need to repair, rehabilitate, or replace components of the system remains a reality. As these individual sections of I-10 are identified and solutions designed, it is possible that additional ROW will be required that may affect residences and/or businesses and/or property thereof.

The Preferred Alternative requires additional ROW be acquired for both the widening and interchange alternatives. Under the conceptual design for the preferred alternative, the apparent ROW directly affects 28 residences, five businesses, seven billboards, 18 parcels of vacant land, and 86 partial parcels associated with both residences and businesses. Until final design, these totals are subject to change. The possibility exists that one or more of the directly affected homes or businesses presently presumed to be acquired could be avoided as a result of design, design exceptions, or construction methods.

The potential ROW acquisition costs are detailed in **Table 3-17**. This cost does not include utility relocations or noise mitigation. Potential utility relocations are discussed in Section 3.24.1. Costs associated with mitigation for noise and utilities are also included in the Preliminary Opinion of Probable Cost in **Appendix A**.

Special or unusual conditions have been identified as they relate to construction methods and the potential formation of new historic districts and/or the creation of multiple listings under the National Historic Preservation Act. Discussions have been held with property owners, operators, state agencies, and others regarding potential displacements, and will continue. Replacement housing is available in the area of displacement. There are no unusual problems anticipated in providing replacement housing under normal procedures.

TABLE 3-17
ESTIMATED POTENTIAL RIGHT-OF-WAY COSTS

Item	Unit Price	Unit	Quantity	Total
Land[1]	$62,000	ACRE	3.3294	$206,420
Improvements – Residences[2]	LUMP	LUMP	28	$11,010,933
Improvements – Commercial Buildings[3]	LUMP	LUMP	5	$759,716
Improvements – Billboards[4]	$70,000 to $90,000	LUMP by number of Poles	7	$620,000
Damages – Residential Sheds[5]	$900	LUMP for 8x6 size	2	$1,800
Damages/Repair – Driveways/Parking Lots[6]	$7.00	SF	8,417	$58,919
Moving Costs (From Conceptual Stage Relocation Plan)				$11,903,515
Subtotal				**$24,561,303**
Appraisals	$400.00	PROPERTY	146	$58,400
Litigation (10% of subtotal)				$2,456,130
Contingency (5% of subtotal)				$1,228,065
TOTAL				**$28,303,898**

Values for real estate are for estimation purposes only.

SF = square feet

LF = linear feet

NOTES:

1. Total acreage for land is based on values provided in Table 6 of the Conceptual Stage Relocation Plan provided under separate cover.
2. Residence estimated value is based on estimates from zillow.com and realtor.com estimate or on current square foot (ft^2) sales prices and recent sales data for the study area and does not reflect the prices of the current inventory of replacement housing.
3. Commercial estimated values are based on average price per square foot being asked for commercial buildings within a 1.5-mile radius of the Perkins Overpass and Zillow estimates; price does not reflect the value of the business. Cost for outbuildings is included.
4. Costs for billboards are based on estimates obtained from University and bizfluent. Four 4-pole billboards and the one 6-pole billboard are priced at $70,000 each and the monopole billboards are priced at $90,000 each.
5. Costs for shed from Home Depot cost estimator for wood shed of 8x6 size.
6. Amount of driveways/access affected scaled off the project GIS. Costs for replacement obtained from Homeadvisor.com.

3.21 Environmental Justice Analysis

3.21.1 Existing Environment

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations (February 11, 1994), specifies actions to be taken on a range of issues that are intended to promote nondiscrimination in federal actions to provide minority and low-income communities equal access to public information regarding a federal action, and to provide an opportunity for public participation in the evaluation of a federal action in matters relating to human health and the environment. A demographic profile for the tracts discussed in Section 3.20 was compiled to answer the following questions posed by EO 12898:

- Does the potentially affected community include minority and/or low-income populations?
- Are the environmental impacts likely to fall disproportionately on minority and/or low-income members of the community and/or tribal resources?

The population/minority and poverty data obtained from the USCB AFF website are illustrated on **Tables 3-14** and **3-15** and on **Figures 17 and 18 a** and **b.** As discussed in Section 3.20, five census tracts in the project study area support minority and/or low-income populations. Low income populations are defined as low-income if the family income is less than twice the federal poverty threshold based on US Census Bureau calculations. Based on this data, EJ concerns exist that require specific outreach efforts and consideration to ensure participation in the EA process.

3.21.2 Environmental Consequences and Mitigation

The No-Build Alternative will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations in the short term. It is possible that future rehabilitation and reconstruction of I-10 due to aging infrastructure could impact environmental justice communities to some extent, possibly disproportionately.

The Preferred Alternative has the potential to affect 28 residences and five businesses. Two of the five businesses and 18 of the residences are in an area supporting environmental justice populations (Old South Baton Rouge). In compliance with EO 12898, the project team provided extensive outreach to this community, provided stakeholder briefings for the neighborhood to inform and obtain comments, and LA DOTD Real Estate reached out to the

business and homeowners to answer questions and address concerns.

I-10 was routed through Beauregard Town and Old South Baton Rouge when it was constructed in the 1960s. While it is elevated through this area, it is basically the boundary between the neighborhoods, which historically have supported a majority of minority and low-income persons. To restore community connectivity and develop uses compatible with the presence of the interstate, the preferred alternative includes mitigation, CC, and CSS elements. Mitigation in the Old South Baton Rouge cultural district and beyond includes bike and pedestrian elements to connect Expressway Park to East Polk Street Park, Knock Knock Children's Museum, City Park, and the City Park Lake. Those areas that have Joint Use Agreements or JUAs for parking under the interstate will have parking restored with lighting for safety and aesthetics as well as landscaping. Streetscaping including landscaping and lighting will be included with the bike and pedestrian trails. Opportunities for public art areas are also included.

3.22 Context Sensitive Solutions

Context Sensitive Solutions (CSS) is a collaborative approach whereby transportation solutions are developed to fit within the context of their surroundings while taking into consideration the needs and desires of the community (FHWA). LA DOTD is proposing CSS designs in several locations along the I-10 corridor as part of the proposed project. These concepts incorporate LA DOTDs Complete Streets Policy as well as incorporate principles of Community Connections, which are discussed in Section 3.23. The concepts are presented below.

Expressway Park to Dalrymple

LA DOTD proposes a "greenway" shared use path that extends from 10th Street at Expressway Park to Dalrymple (**Exhibit 7**). This path will be constructed within LA DOTD ROW and will provide a connection for visitors to Expressway Park and the proposed Downtown Development District's Greenway bike path to East Polk Street Park and City Park via the safe crossing of Dalrymple at March Street. For the first time, visitors to East Polk Street Park and those living in Old South Baton Rouge, Eddie Robinson Sr. and Beauregard Town neighborhoods will have a route to safely navigate via biking, walking, jogging, to Expressway Park, City and University Lakes, and City Park. This new trail has been designed with input from BREC to ensure its compatibility with mitigation and enhancements planned for East Polk Street Park.

EXHIBIT 7
EXPRESSWAY PARK TO DALRYMPLE GREENWAY TRAIL

Perkins I-10 Ramp Area (Perkins Overpass Area)

LA DOTD proposes a complete plan for the use of the areas to be vacated by the removal of the Perkins I-10 ramps (**Exhibits 8** and **9**). The Perkins CSS and design plan includes:

- The extension of Greenwood Drive as a two-lane roadway from its existing terminus to Perkins adjacent to the Acadian Village Shopping Center
- A multiuse path from the Perkins Overpass to Perkins on the north side of the Greenwood Drive extension
- New parking areas
- Restoration and improvement of existing parking areas (some of which have Joint Use Agreements or JUAs) under I-10 and under the off ramp to be removed

A promenade/green space between Perkins and the new parking lot adjacent to Parrain's restaurant with planter boxes, benches, and a pedestrian crossing to the Acadian Village Shopping Center.

Additionally, LA DOTD has proposed that two bridge replacements, City Lake Bridges and the Nairn overpass bridge be replaced with signature structures that enhance the transportation experience. The City Lake Bridge concept has been presented with two different design options that are both in harmony with the lake and future lake area enhancements (**Exhibit 10**). These designs will be presented to the public for the third time during the public hearing to receive more comments.

The Nairn design incorporates a shared use path on the east side and pedestrian only path on the west side. Concepts include but are not limited to a bump out and a more aesthetic screening for the bridge rail area as shown on **Exhibit 11** to represent possibilities for the design. The paths across the bridge will connect to Nairn Park to an existing school and eventually existing sidewalks to Bawell Street.

EXHIBIT 8
PERKINS ROAD OVERALL CSS PLAN

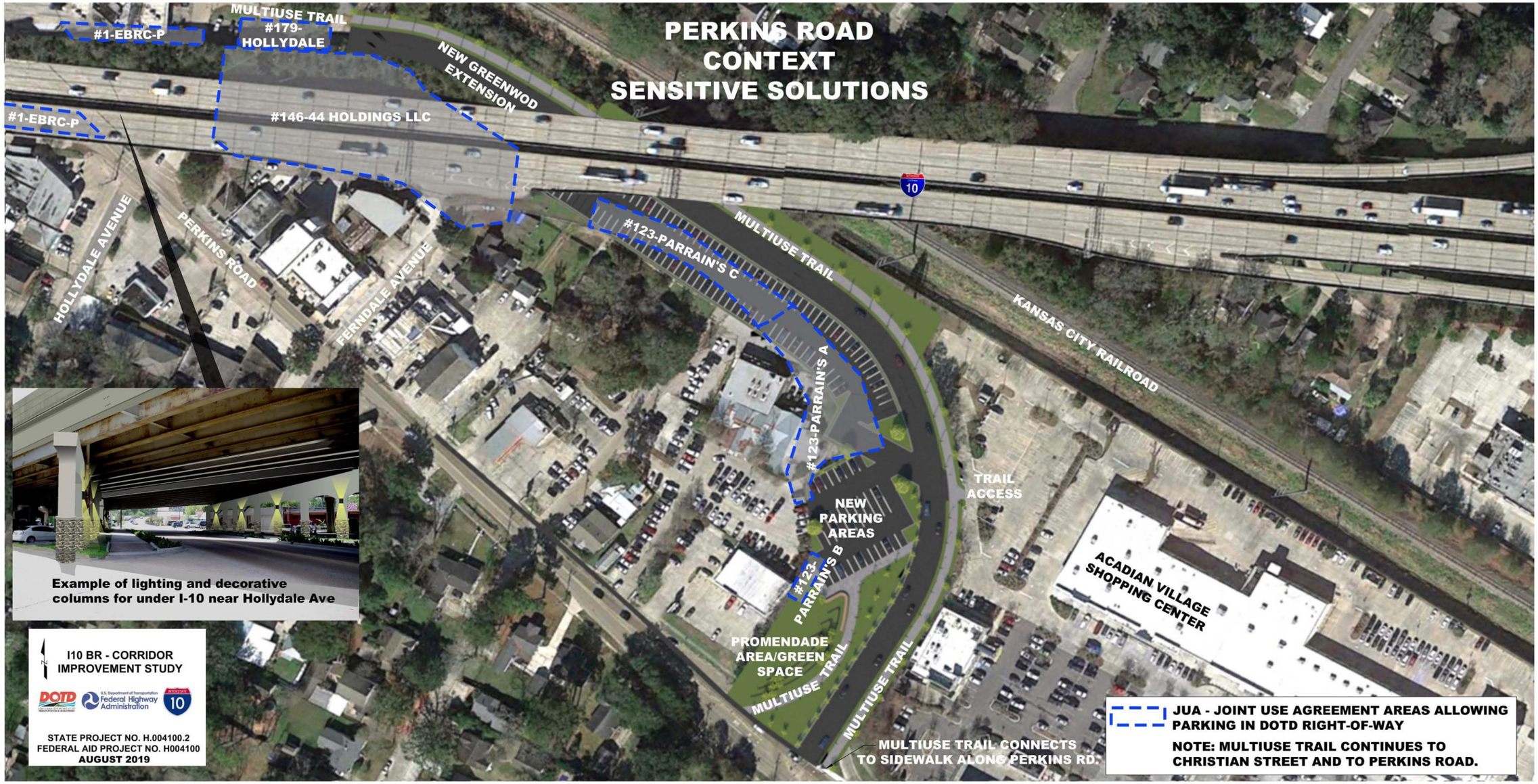


EXHIBIT 9
PERKINS ROAD CSS CONCEPT RENDERINGS

EXHIBIT 10
CITY LAKE BRIDGES CONCEPTS

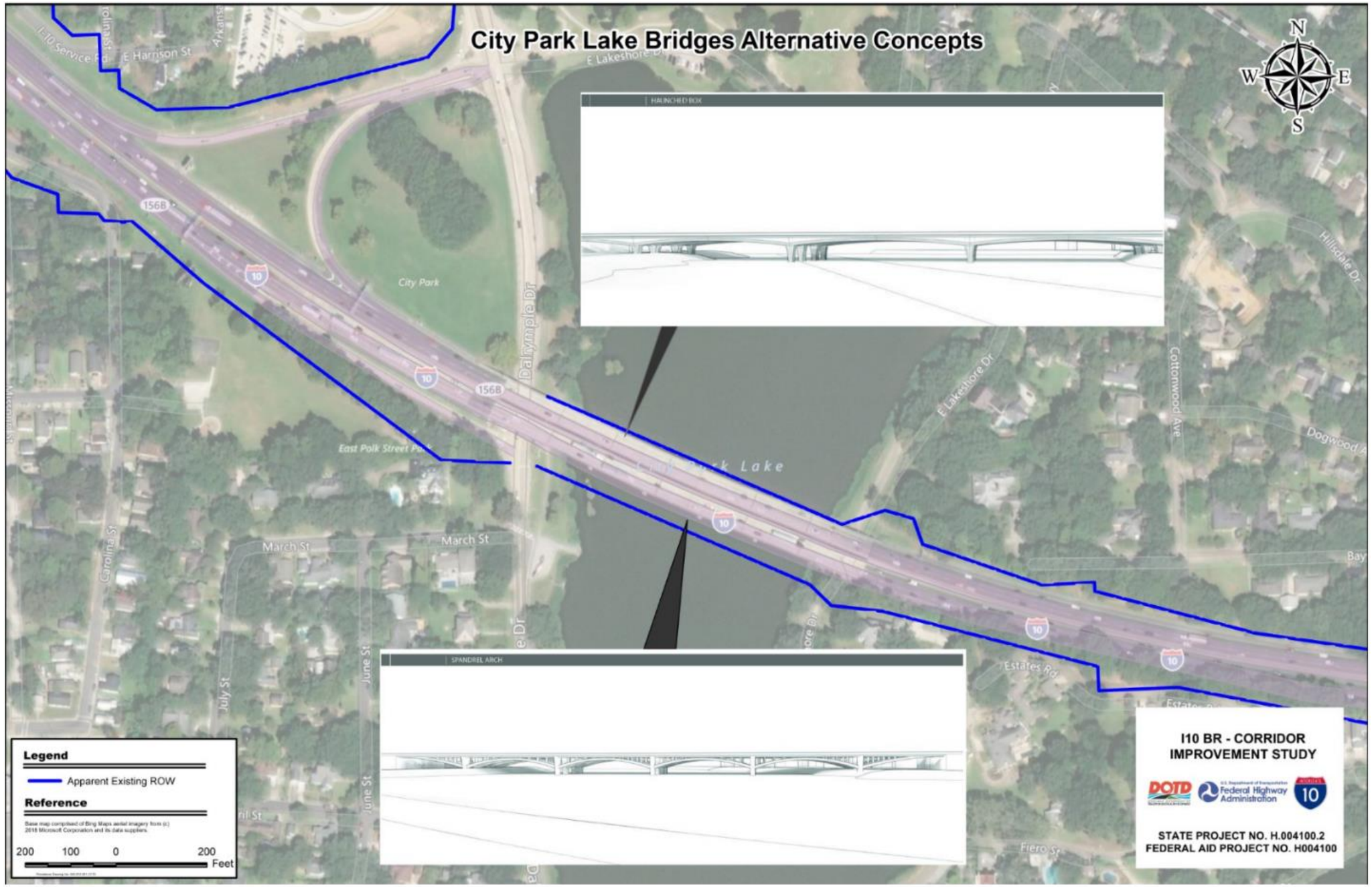
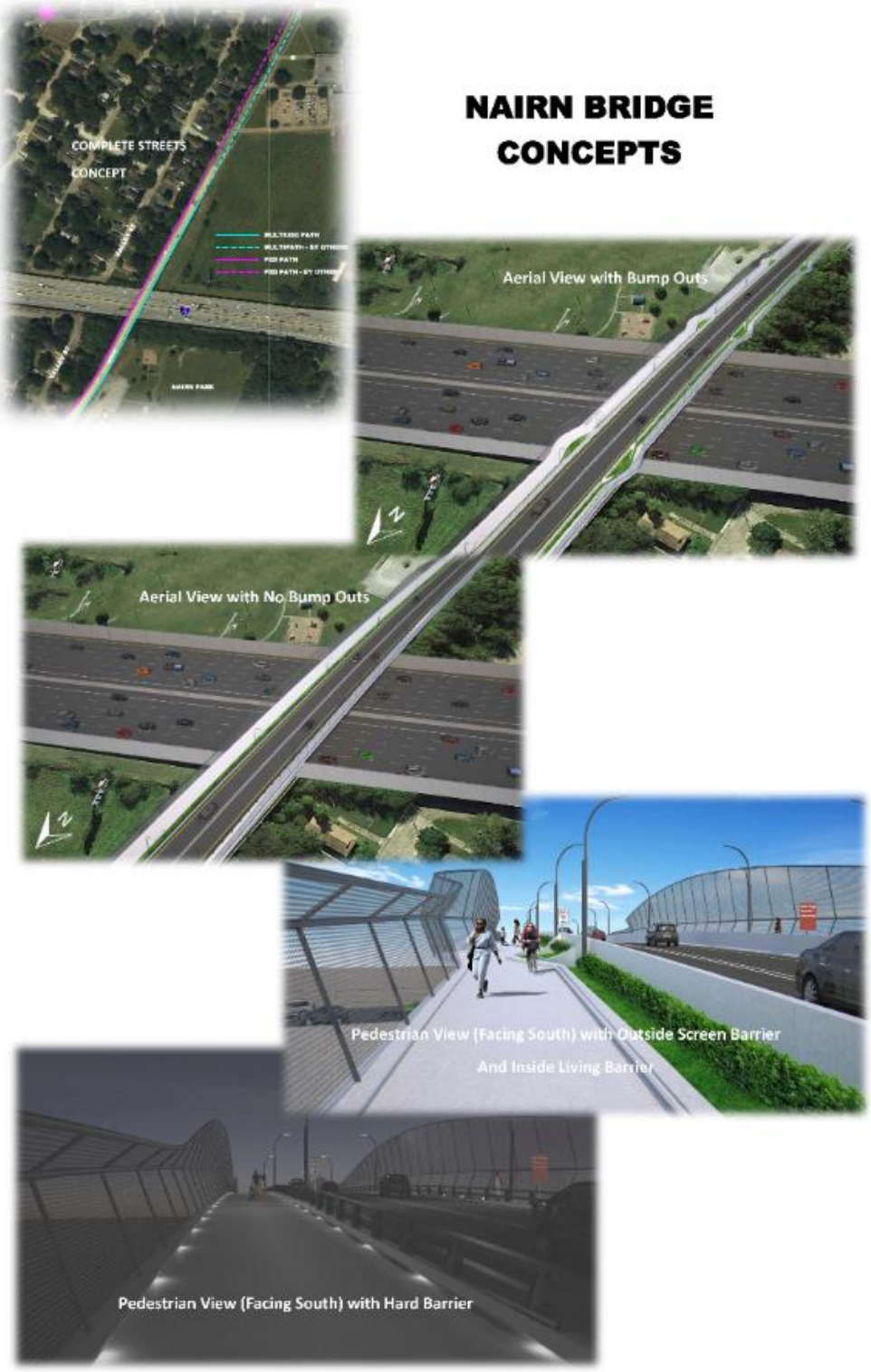


EXHIBIT 11
NAIRN BRIDGE CONCEPTS



3.23 Community Connections

Community Connections (CC) is an FHWA initiative to improve connections within communities affected by transportation facilities of the past. Ideally, CC applies approaches that turn aging infrastructure into opportunities for reestablishing community connections and cohesion.

When the interstate was originally constructed through Baton Rouge, it traversed established communities. Although the interstate was elevated through most of the inner city, allowing many streets to remain connected, acquisition of a linear strip of ROW through established communities created a division that exists today. In the spirit of reconnecting communities and restoring existing communities, LA DOTD proposes concepts in several locations along the I-10 corridor as part of the proposed project and as defined below. These concepts incorporate shared use paths, community gathering spaces, improved surface street connections, and improved parking and access for a retail/business area. LA DOTD's objective is to provide the needed transportation improvements in a manner that also provides increased mobility, accessibility, and livability to the communities adjacent to the interstate.

Shared Use Paths

Expressway Park to Dalrymple

The proposed greenway shared use path discussed in Section 3.22 and shown on **Exhibit 7** represents one shared use path. This path will be constructed within LA DOTD ROW and will provide a connection that does not exist today for cyclists and pedestrians to traverse the nearby neighborhoods and access Expressway Park, East Polk Street Park, City Park, and the City Park and University Lakes.

Expressway Park to the Mississippi River Levee

LA DOTD is considering the inclusion of a shared use path that would connect Expressway Park to Highland Road. The concept would provide a connection via existing sidewalks and streets to the South Boulevard levee trailhead. This connection would serve the communities of Beauregard Town and Old South Baton Rouge as well as visitors to Expressway Park and downtown Baton Rouge.

Nairn Street Overpass

The Nairn Street Overpass is proposed to be replaced with a signature bridge structure designed to provide much needed multimodal connectivity. Nairn's design incorporates a shared use path on the east side and pedestrian only path on the west side. This shared use path provides facilities as suggested by the cyclist community. It includes but is not limited to options for a bump out concept and a more aesthetic screening for the bridge rail area (see **Exhibit 11**). The paths across the bridge will connect Nairn Park to a school on the north side and ultimately to Bawell Street. Additionally, the path will connect to a new sidewalk to be constructed as part of a separate project from Perkins to the Dawson Creek Bridge at Valley Street.

Perkins I-10 Ramp Area (Perkins Overpass Area)

A shared path from the Perkins Overpass to Perkins on the north side of the Greenwood Drive extension is proposed as one feature of the larger CSS vision for the area to be vacated by the removal of the Perkins I-10 Ramps (see Section 3.22 and **Exhibits 8** and **9**).

Community Gathering Spaces

Expressway Park

Expressway Park provides a unique opportunity to improve community connections. This 40-acre park lies within LA DOTD ROW and is centered around a large residential community with churches and schools. The Downtown Greenway bike path winds through the park, with the trailhead supporting benches, bike racks, and outdoor fitness equipment. A playground is located off the path close to where it exits the park. Other amenities include a lighted football field, unlighted multipurpose field, indoor and outdoor basketball courts, an outdoor pavilion, and a recreational center. Expressway Park is managed and maintained by BREC and is an integral part of the community. BREC will develop the concept for the gathering area with input from the community. LA DOTD will provide funding to BREC to implement a community gathering area within the existing Expressway Park. The improved access to be afforded the park through the previously mentioned shared use paths will benefit functions at the new gathering space.

*Perkins I-10 Ramp Area (see **Exhibits 8** and **9**)*

A promenade/green space is proposed between Perkins and a new proposed parking lot adjacent to Parrain's. It includes planter boxes, benches, a pedestrian crossing to the Acadian Village Shopping Center, and is connected to the new shared use path adjacent to the Greenwood

extension via another crossing. This space is a needed addition to the existing Perkins Road Overpass area (part of the Perkins Road Arts District), which supports numerous popular restaurants, shopping, and health and wellness facilities.

Surface Street Connections, Access, and Parking

*Perkins I-10 Ramp Area, Perkins Overpass Area (see **Exhibits 8** and **9**)*

The Perkins Road Arts District retail area is a very popular spot for locals but lacks sufficient parking and walkability. As part of its CSS vision for this area, and as defined in Section 3.22, LA DOTD has proposed concepts that:

- Extend Greenwood Drive as a two-lane roadway from its existing terminus to Perkins adjacent to the Acadian Village Shopping Center
- Provide new parking areas
- Restore and improve existing parking areas (some of which have Joint Use Agreements or JUAs) under I-10 and under the off ramp to be removed

LA DOTD intends to enter new and maintain existing JUAs, most likely with the City, to improve parking and circulation within the area. New parking lots will be constructed as part of the project along with a new surface street (Greenwood Drive extension) with a parallel shared use path that will traverse under the interstate connecting Perkins Road to a local street behind the retail area. This will improve circulation for vehicles, pedestrians, and bicyclists and be designed in conjunction with the greenspace and additional sidewalks mentioned above.

3.24 Other Considerations

3.24.1 Utilities

There are numerous utilities in the project area. As no ROW acquisition would be required under the No-Build Alternative, there would be no utility impacts anticipated.

Table 3-18 reflects the utilities presumed to be affected by the construction of Preferred Alternative. Utility relocation is estimated to be approximately four percent of the construction cost for the project, or approximately $36,276,000.

TABLE 3-18
UTILITIES POTENTIALLY AFFECTED
BY THE PREFERRED ALTERNATIVE

Utility Owner	Type	Footage to be Relocated
Acadian Gas P/L	Gas Pipeline	No conflicts
Air Liquide America	Gas Pipeline	No conflicts
AT&T	Distribution	17,289
AT&T	Transmission	33,215
Atmos Energy	Gas Pipeline	No conflicts
Baton Rouge Water	Water	42,231
CenturyLink / Lightcore	Fiber Optic	18,113
City of Port Allen	Sewer	No conflicts
Canadian National Railway	Railroad	No conflicts
Conterra Broadband	Fiber Optic	No conflicts
Cox Communication	Fiber Optic	17,288
Eatel	Fiber Optic	No conflicts
EBR City-Parish Sewer	Sewer	12,894
Entergy Louisiana	Electrical	17,288
Entergy Gulf States	Gas Pipeline	31,673
ExxonMobil Pipeline	Gas Pipeline	No conflicts
Formosa Plastics	Gas Pipeline	No conflicts
Genesis Crude Oil LP	Gas Pipeline	No conflicts
Level 3 Communications	Fiber Optic	No conflicts
MCI Communications	Fiber Optic	No conflicts
Qwest Communications	Fiber Optic	No conflicts
Shell Pipeline	Gas Pipeline	No conflicts
Southern Light	Fiber Optic	No conflicts
Uniti Fiber	Fiber Optic	3,357
WBR National Gas & Water	Gas & Water Pipeline	400

3.24.2 Traffic Patterns

The No-Build Alternative is expected to have no impact on current traffic patterns. As congestion continues to increase, it is possible that traffic patterns will change for some, as they assess alternative routes to avoid highly congested traffic hours.

Implementation of the Preferred Alternative is expected to result in a change in traffic patterns, as the project will provide additional

capacity with the construction of an additional lane in each direction on I-10, reduce or improve merge movements, and improve several interchanges.

The consolidated Washington/Dalrymple interchange will include several roundabouts to keep traffic moving after exiting I-10 and prior to entering I-10. A roundabout is also included at the Terrace Street exit, which is under construction under a separate project. The combination of the new Terrace interchange and the Washington/Dalrymple consolidated interchange will allow traffic traveling eastbound from West Baton Rouge Parish to no longer be impacted by traffic from I-110 travelling to the former Washington exit. It will also provide much needed access to I-10 eastbound from the Louisiana State University campus via Dalrymple.

Removal of the Perkins ramps will result in travelers exiting I-10 eastbound and entering I-10 westbound to/from Perkins utilizing other interchanges. The ramp lengthening, additional lanes at the terminal intersections and surface street improvements on Acadian are designed to accommodate the additional traffic volumes.

The option of providing a right yield at Trust Drive from the I-10/I-12 College westbound off ramp will allow exiting traffic that is bound for Corporate Boulevard to exit the ramp prior to reaching College. This will free up northbound College capacity.

3.24.3 Construction Effects

3.24.3.1 Economic and Social Effects

3.24.3.1.1 Business Effects

There will be times during the construction of the Preferred Alternative that temporary road closures will be necessary. It is anticipated that the closures will include interchanges as well as surface streets. While LA DOTD will attempt closures over weekends and less trafficked times, impacts to existing businesses are possible. Some closures may be as short as overnight, others may last several weeks. Shifting traffic patterns may result in fewer patrons for some establishments as people may avoid areas where construction is affecting surface street or parking or rerouting of traffic to other interchanges may result in inconvenient access for others.

LA DOTD is committed to minimizing the impact to the residents, the property owners, the neighborhoods, and the businesses that will be seriously affected by

construction of the Preferred Alternative. They are aware of and sensitive to the particular impacts construction may have for businesses along the Preferred Alternative corridor. They are exploring strategies to specifically address the issues associated with business impacts during construction. The LA DOTD's plan is to do all they can within the state and federal laws to ensure that the property owners and businesses are well-served.

3.24.3.1.2 Detours and Accessibility

No I-10 mainline detours are proposed. As stated, temporary closures will affect surface streets and interchanges. For interchanges, specifically where only widening is proposed, it is anticipated that temporary pavement will be employed to maintain traffic flow. Construction phasing will be accomplished using traffic shifts for eastbound and westbound directions of I-10 as outlined in the Line and Grade Study Report in **Appendix A**.

3.24.3.1.3 Utilities

There will be times during the construction of the Preferred Alternative that road closures will be necessary to relocate utilities. **Table 3-18** provides a listing of utility companies that have been identified with potential utility conflicts based on the proposed I-10 improvements.

3.24.4 Physical

3.24.4.1 Staging Areas

The Line and Grade corridor study contains nine main SECs along the I-10 mainline with four separate improvement sections that benefit overall capacity and safety. These are defined in Chapter 2 and are fully described in **Appendix A**, the Line and Grade Study Report. The considerations of staging areas during the constructability review of the Line and Grade Study will be discussed further below.

The following narrative will outline the individual segments and the staging areas associated with each segment. For purposes of this narrative, descriptions are given starting on the west end of the SEC moving towards the east end.

SEC-01
I-10: LA 415 to LA 1

SEC-01 contains adequate ROW for the proposed staging areas to be contained in the I-10 median and along the outside shoulder to the existing ROW. The proposed limits of construction (LOC) fits completely within the apparent existing ROW, therefore no additional ROW or construction servitude will be needed for staging area purposes.

SEC-02
I-10: Mississippi River Bridge Westside Approach

SEC-02 proposed staging areas will be within the green space (non-paved surfaces) and along the existing shoulders of LA 1, existing at-grade ramps, frontage roads, and Le Blanc Road for the I-10 and LA 1 interchange. Concrete barriers will be placed to separate traffic from the staging area when the shoulder is used. SEC-02 LOC is proposed to be within the apparent existing ROW.

SEC-03
I-10: Mississippi River Bridge Eastside Approach

SEC-03 proposed staging areas will be provided using barges within the limits of the Mississippi River, under the existing I-10 mainline from approximately River Road to Highland Road, and along the outside of the existing bridge out to the apparent existing ROW to the east end of the segment. SEC-03 LOC is proposed to be within the apparent existing ROW.

SEC-04 & SEC-05
I-10: Eastbound Mainline (Ramp) & Washington/Dalrymple Interchange Area

SEC-04 proposed staging areas will be provided using the space between the existing I-10 bridge structure and the required ROW and below the bridge structure. Additional proposed staging areas are the proposed acquired properties of the house at 944 Maximillian Street and the convenience store at 945 East Boulevard, the house at 943 Maximillian will likely be relocated on the existing property, making that property not suitable for staging.

SEC-05 proposed staging areas will be provided using the space between the existing I-10 bridge structure and the required ROW, the green space and Braddock Street for the eastbound I-10 direction, and McCalop Street for the westbound I-10 direction. Road closures, while access is maintained for local traffic only, can be provided for both Braddock Street and McCalop Street to allow

for additional staging east until Washington. Washington to Dalrymple proposed staging areas will be the space behind the concrete barriers to the required ROW for both eastbound and westbound directions and the green space on the north side of the I-10 and Dalrymple Interchange.

SEC-06
I-10: City Park Lake Bridge and Roadways

SEC-06 proposed staging areas will be provided using the green space on the north side of the I-10 and Dalrymple Interchange, space behind the concrete barriers to the required ROW for both eastbound and westbound directions, barges within the limits of City Park Lake, and at-grade sections of I-10 mainline as traffic is shifted to each side of the section. Concrete barriers will be placed to separate traffic from the staging areas.

SEC-07, SEC-08, & **SEC-08(A)**
I-10: Perkins/KCSRR/Acadian Overpass Bridge, Acadian to College, & Nairn

SEC-07 proposed staging areas will be provided using the space between the existing I-10 bridge structure and the required ROW, a portion of the ROW available after the Perkins on and off ramps are removed, and the green space at the I-10 Acadian Interchange. Existing JUA parking areas are expected to be temporarily closed for varying durations relative to construction progress. At any given time, there should be some available parking in JUAs that are not directly affected by ongoing construction. Additionally, it is possible to establish temporary parking in ROW vacated by the Perkins ramp removal prior to closure of JUA parking areas to ensure parking remains available for area businesses.

SEC-08 proposed staging areas will be provided using the space between the existing I-10 shoulder and the apparent or required ROW, and the green space available at the I-10 and College Interchange.

SEC-08(A) proposed staging areas will be provided using the space between the existing I-10 shoulder and the apparent ROW for both the eastbound and westbound directions. The staging areas will be east of the proposed Nairn bridge.

SEC-09 & SEC-09(A)
I-10: College to I-10/I-12 Interchange

SEC-09 and SEC-09(A) proposed staging areas will be provided using the green space available at the I-10 and College

Interchange, space between the existing I-10 shoulder and the apparent or required ROW, and the green space available between I-10 and I-12 at the eastern end of the corridor.

3.24.4.2 Water Quality

The potential for sedimentation of erosional materials into the nearby drainage ditches, adjacent wetlands, and bayous caused by storm water runoff could increase during construction activities because soils are exposed and are more susceptible to erosion.

BMPs to be implemented as part of the Storm Water General Permit for Construction Activities will minimize and mitigate for construction-related impacts to area waterways.

3.24.4.3 Noise, Air, and Vibration

Construction of the project may result in temporary noise increases for the residences and businesses along the proposed route. It is difficult to predict levels of construction noise at a particular receptor or group of receptors. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. Construction normally occurs during daylight hours when people tolerate occasional loud noises. The contractor should operate, whenever possible, between the hours of 7:00 a.m. and 5:00 p.m. The duration for individual receptors should be short. Relative to the need to prevent lane closures during peak traffic periods, construction during the overnight hours is likely to occur at various intervals during the project. The project plans and specifications include provisions requiring the contractor to make every reasonable effort to minimize construction noise through abatement measures such as ensuring all construction equipment is properly muffled and all motor panels are shut during operation. LA DOTD contractors shall comply with local construction noise ordinances and all construction equipment will be required to comply with Occupational Safety and Health Administration (OSHA) regulations as they apply to the employee safety.

In locations where there is adequate ROW and access, planning for the construction phase will consider the applicability of installing federally funded noise barriers in advance of roadway construction. In areas where barriers may be installed prior to construction, construction related noise impacts will be reduced.

During the construction phase of this project, temporary generation of construction-related pollutant emissions and dust could result in short-term air quality effects. Particulate matter (PM) or fugitive dust from site preparation will be the primary construction-related

emissions. The potential impacts of PM emissions will be minimized by using fugitive dust control measures, such as covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate and in accordance with the *Louisiana Standard Specifications for Roads and Bridges.*

During the construction phase, should pile driving be determined a viable construction option, vibration may be a concern, as vibration is an expected byproduct of pile driving. LA DOTD has specific procedures for documenting adjacent structures before and after pile driving activities. Generally, regular construction activities for roadways typically do not cause vibrations that rise to the level of property damage. A "Vibration Complaint Form" is available to the property owner(s) for such occurrences and can be obtained from LA DOTD as necessary.

3.25 Permits, Mitigation, Commitments

The Preferred Alternative will involve the preparation and submittal of the federal and state permit applications listed in this section. Mitigation measures are also discussed to assist in avoiding, minimizing, or compensating for adverse environmental impacts associated with the proposed project.

3.25.1 Permits

Section 404/10 Permit

The USACE requires a permit under the authority of Section 404 of the Clean Water Act (CWA) for impacts to waters of the United States, including wetlands and Other Waters. Based on the wetlands finding report (**Appendix D**), the conceptual project does not affect jurisdictional wetlands, but may require a permit for impacts to Other Waters, as discussed below and would be covered by application under the Nationwide Permit Program.

Additionally, the USACE requires a permit under the authority of Section 10 of the Rivers and Harbors Act for impacts to navigable waters. A permit must be submitted to USACE for all work in, over, or under navigable waters. The purpose of this permit is to prevent the obstruction or alteration of navigable waters of the US. The preferred alternative does not involve construction in navigable waters. Assuming that no work will be conducted in the Mississippi River or its banks as a result of the project, no permit is anticipated.

Nationwide Permit Under Section 404

LA DOTD would be applying for a Nationwide Permit Number 14 to authorize potential impact to Other Waters as a result of the project. This permit has an LDEQ issued Section 401 Water Quality Certification (WQC) that certifies that any work placing dredged or fill material into waters of the state including wetlands will not violate the state's water quality standards

USCG Bridge Permit

Modification to the United States Coast Guard Bridge Permit for modifications to the MRB approaches may be required.

Storm Water General Permit for Construction Activities

The LDEQ requires projects with discharges of storm water from construction activities to obtain a Louisiana Pollutant Discharge Elimination System (LPDES) Storm Water General Permit for Construction Activities. Storm water runoff from construction activities for this project will require a LPDES permit since it results in the disturbance of greater than one acre. LA DOTD has a General Permit for storm water discharges related to construction and maintenance projects (LAR600000). The development of a Storm Water Pollution Prevention Plan (SWPPP) is required under this permit. Specific BMPs for the site, along with maintenance procedures and an inspection process, will be detailed in this plan.

Flood Protection Levees and Floodgates

While the Preferred Alternative does begin in West Baton Rouge Parish and cross the Mississippi River and its associated levees en route to Essen Lane, no construction is planned where it would result in potential impact to the batture or piling placement within 1,500 feet of a levee. LA DOTD will pursue a Letter of No Objection for any work in proximity to the levees and if necessary, will apply for a permit with the levee district in the event that laydown or staging areas will be within 1,500 feet of the levees.

3.25.2 Mitigation

Mitigation for noise impacts is required. Noise barriers will likely be installed along the project corridor where determined reasonable and feasible to receive federal funding. Approximately 9,792 linear feet will be installed along westbound I-10 between East Washington and Dalrymple, between East Lakeshore and the Perkins Overpass, and eastbound between East Washington and Christian St. Areas impacted by noise that do not qualify for federal funding may receive

mitigation in the form of noise barriers that would be funded by a special state appropriation. LA DOTD has committed to seeking such appropriation where the affected public agrees that noise barriers are desired. There is approximately 10,000 linear feet of noise barrier that would require special state appropriation.

Mitigation for impacts to Section 106 and Section 4(f) properties is required. Per the Programmatic Agreement developed for this project mitigation is proposed in the form of:

- Vibration Monitoring
- Development and Provision of Historic Contexts for the Proposed OSBRHD, HOHD, and PROMPS
- Historic District Public Informational Displays in Expressway Park and East Polk Street Park
- Historic Markers in LA DOTD ROW
- Recordation
- Relocation of Buildings

Section 4(f) recreational properties including East Polk Street Park and the City Park Lake Trail will be mitigated by providing for the establishment of an internal trail with amenities and a vegetation buffer for East Polk Street Park.

3.25.3 Commitments

LA DOTD has committed to CC and CSS/CSD in the vicinity of the Perkins ramps including but not limited to the extension of Greenwood Drive, a multiuse path from the Perkins Overpass to Perkins near the Acadian Village Shopping Center, new parking areas, restoration of existing parking areas under I-10 and under the off ramp to be removed, and additional green space.

Other CC/CSS/CSD commitments include:

- Installation of a greenway trail from Expressway Park to Dalrymple including a safe, redesigned pedestrian crossing at Dalrymple and March Street
- BREC will develop a concept for a gathering space at Expressway Park with input from the community. LA DOTD will provide funding to BREC to implement a community gathering area within the existing Expressway Park. The improved access to be afforded the park through the previously mentioned shared use paths will benefit functions at the new gathering space.

- Replacement of the Nairn Bridge over I-10 with a “signature” bridge structure providing a multiuse path on the east side that will ultimately connect to the existing path on the north side of I-10, and a pedestrian only path on the west side, there are also options for bump-outs and decorative mesh screening
- Replacement of the City Lake Bridges with a “signature” bridge that could be a Spandrel Arch or Haunched Box

CHAPTER 4.0

AGENCY INVOLVEMENT AND PUBLIC OUTREACH

4.0 AGENCY INVOLVEMENT AND PUBLIC OUTREACH

4.1 Agency Coordination

As part of the EA outreach, SOV letters were mailed out to federal, state, and local agencies and elected officials on March 7, 2017. A table detailing the recipients and responses received along with a copy of the SOV package and responses are in **Appendix C**. The US Coast Guard (USCG) was invited to be a cooperating agency. A cooperating agency means any Federal Agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative (40 CFR 1508.5). USCG accepted the role of a cooperating agency.

Additionally, as part of the Section 106 process, letters inviting participation in the Section 106 process for the project were sent. The letter and list of invitees are also located in **Appendix C**.

4.2 Public Outreach

The extensive public outreach conducted during Stage 0 was continued in Stage 1 due to the sensitive and high-profile nature of the project. As the Stage 1 Planning/Environmental study progressed, the project team met with key project partners and elected public officials from across the I-10 Corridor. Beginning in March 2018, officials were provided updated briefings on the study's status and interviews were conducted in person, usually individually and face-to-face where possible.

The purpose of these briefings was to inform the officials about the public meetings, to distribute informational materials, to gather much-needed input, and to offer stakeholders an opportunity to share their thoughts and needs regarding any improvements and potential means for improving the I-10 corridor in East Baton Rouge and West Baton Rouge Parishes. Fifty-one separate briefings were conducted, and since some were group presentations, these resulted in a total of 211 individuals receiving updates between March and May 2018. Once the public meeting dates were set, notifications were distributed as well as packets of flyers and push-cards announcing the meeting dates to area stakeholders. **Appendix I** contains further details on the briefing efforts conducted to these stakeholders.

As the Stage 1 Planning/Environmental study continued to press forward, a concerted effort to obtain input on potential Context Sensitive Design (CSD) opportunities from the public was created and initiated in the spring of 2018. Initial discussions on this topic began between the project team and stakeholders such as LA DOTD, BREC and the planners involved with the East Baton Rouge bike/pedestrian master planning process, and these focus groups sought to broaden the conversation to discussions held with the neighborhoods most closely lining the project area. Neighborhood

groups, pastors, and business owners along the corridor were invited to small focus group sessions to first learn more about the project details, then to offer suggestions regarding potential CSS for their areas. Insights from these focus groups were utilized in designing the August 2018 public meetings, including the CSS/CSD exhibits. Additional details regarding these focus groups are in **Appendix I.**

A round of public meetings was held in August 2018, consisting of three separate meetings to allow ample opportunity for all members of the interested public to attend. The meetings were held at different locations and times, covering both East and West Baton Rouge Parishes. All three public meetings delivered identical information, beginning with a brief overview from LA DOTD leadership then launching into an informative audio recorded PowerPoint presentation with onscreen graphics. Participants then were able to walk through an open house exhibit area featuring maps, conceptual solutions, and CSS/CSD exhibit stations. Each was staffed by members of the project team and/or LA DOTD. A GIS mapping station was offered to provide site-specific answers to property questions, and the LA DOTD real estate team was on hand at each meeting to answer potential acquisition questions. The CSS/CSD exhibits offered the opportunity to provide site-specific inputs tied to the following four areas:

1. Perkins Ramps
2. Nairn Bridge
3. City Park Lake Bridge
4. Expressway Park to Dalrymple

A total of 737 members of the public attended the meetings, which generated 247 comment forms or verbal comment records to the court stenographer yielding more than 600 comment trends, as well as 92 comments from the CSS/CSD exhibit stations. The top trends resulting from the comments (by volume) were the following, with items 3-5 receiving roughly the same volume of comments:

1. Tree concerns
2. Noise concerns
3. Lane concerns/travel time
4. Comments in favor of project
5. Alternate routes/solutions

The many comments were used to further refine the Preferred Alternative and CSS/CSD commitments for the project. Upon completion of these refinements, stakeholder meetings were held to development project commitments. A public hearing will be scheduled after this EA has been provided for public review.

CHAPTER 5.0

REFERENCES

5.0 REFERENCES

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CHAPTER 6.0

LIST OF ACRONYMS

6.0 LIST OF ACRONYMS

ACS	American Community Survey
ACHP	Advisory Council on Historic Preservation
AFF	American Fact Finder
APE	Area of Potential Effect
AQIA	Air Quality Impact Assessment
ASTM	American Society for Testing and Materials
BDEM	Bridge Design and Evaluation Manual
BMP	Best Management Practice
BRAF	Baton Rouge Area Foundation
BREC	Recreation and Park Commission of East Baton Rouge Parish
BTHD	Beauregard Town Historic District
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COA	Control of Access
COC	Constituents of Concern
CREC	Controlled Recognized Environmental Condition
CRS	Cultural Resources Survey
CSD	Context Sensitive Design
CSS	Context Sensitive Solutions
CWA	Clean Water Act
dB	decibels
DDI	Diverging Diamond Interchange
EBR	East Baton Rouge Parish
EDR	Environmental Data Resource, Inc.
EDSM	Engineering Directives and Standards Manual
EJ	Environmental Justice
EO	Executive Order
ERSHD	Eddie Robinson Senior Historic District
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management
FHWA	Federal Highway Administration
FIRMS	Flood Insurance Rate Maps
FPPA	Farmland Protection Policy Act
ft	Feet
GHG	Greenhouse Gas
GIS	Geographic Information Systems
HAP	Hazardous Air Pollutant
HMIRS	Hazardous Materials Incident Reporting System
HOHD	Hundred Oaks Historic District
HREC	Historic Recognized Environmental Condition
HRHR	High-Risk Historical Record

I-10	Interstate 10
I-110	Interstate 110
I-12	Interstate 12
IPaC	Information for Planning and Consultation
LA 1	Louisiana Highway 1
LA 415	Louisiana Highway 415
LA DOTD	Louisiana Department of Transportation and Development
LA SPILLS	Louisiana Spills database
Leq	Equivalent Steady-State Sound Level
Leq(h)	Hourly Equivalent Steady-State Sound Level
LDCRT	Louisiana Department of Culture, Recreation, and Tourism
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries
LOC	Limits of Construction
LOS	Level of Service
LPDES	Louisiana Pollutant Discharge Elimination System
LRFD	Load and Resistance Factor Design
LTHP	Louisiana Trust for Historic Preservation
LUST	Leaking Underground Storage Tank
LWCF	Land and Water Conservation Fund
MOVES	Motor Vehicle Emission Simulator
MPH	Miles per Hour
MSATs	Mobile Source Air Toxics
MTP	Metropolitan Transportation Plan
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NFA	No Further Action
NOAA	National Oceanic and Atmospheric Administration
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NO_x	Nitrogen Oxide
NPL	Nation Priorities List
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	Noise Study Area
O_3	Ozone
OSBRHD	Old South Baton Rouge Historic District
OSHA	Occupational Safety and Health Administration
PA	Programmatic Agreement
Pb	Lead
$PM_{2.5}$	Particle Matter less than 2.5 micrometers
PM_{10}	Particle Matter less than 10 micrometers
PROMPS	Perkins Road Overpass Multiple Property Submission
PWS	Public Water System

RCRA-CESQG	Resource Conservation and Recovery Act – Conditionally Exempt Small Quantity Generators
RCRA-LQG	Resource Conservation and Recovery Act – Large Quantity Generators
RCRA-SQG	Resource Conservation and Recovery Act – Small Quantity Generators
REC	Recognized Environmental Condition
RECAP SS	Risk Evaluation/Corrective Action Program Screening Standards
ROW	Right-of-Way
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SEMS	Superfund Enterprise Management System
SEMS – ARCHIVE	SEMS sites no longer of interest under Superfund (former sites)
SHPO	State Historic Preservation Office(r)
SIP	State Implementation Plan
SONRIS	Strategic Online Natural Resources Information System
SOV	Solicitation of Views
SPN	State Project Number
SPUI	Single Point Urban Interchange
SSA	Sole Source Aquifer
Stage 0	Stage 0 Feasibility Study and Environmental Inventory
Stage 1	Stage 1 Planning and Environmental
SO_x	Sulfur Oxide
SWL/LS	Solid Waste Landfill/Landfill Site
SWPPP	Storm Water Pollution Prevention Plan
TIP	Transportation Improvement Program
TNM 2.5	Traffic Noise Model 2.5
TSM	Transportation System Management
TPH-DRO	Total Petroleum Hydrocarbons-Diesel Range Organics
USACE	United States Army Corps of Engineers
USC	United States Code
USCB	United States Census Bureau
USCG	United States Coast Guard
USDA	United States Department of Agriculture
USDOI	United States Department of the Interior
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
VPD	vehicles per day
WBR	West Baton Rouge Parish
WQC	Water Quality Certification
WRP	Wetland Reserve Program

LIST OF APPENDICES
(ON CD)